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Issue041 January 2009 $4.50 / €3.25 / £2.25

3dtotal

David Giraud

He's been in the games industry for the past 11 years and is currently working for one of the top games companies around today. Find out more about David Giraud in this issue!



Interviews

David Giraud & Aaron Sims



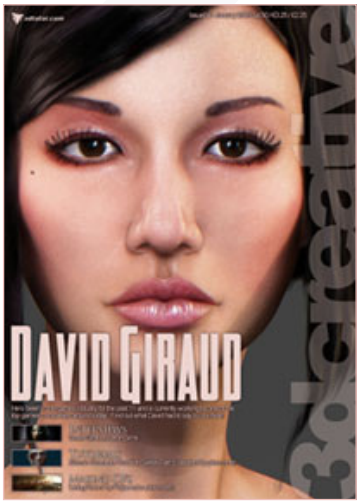
Tutorials

ZBrush Character Creation Series: Part 5 – Beaten-Up, plus more!



Making Of's

'Living Room' by Felipe Lobo, plus more!



Editorial

Welcome to the first issue of 2009 – Happy New Year! This month, keeping with 3DCreative tradition, we have our two artist interviews, the first of which is with the one and only **David Giraud**, possibly best known for his work as senior character artist on *Assassin's Creed* at Ubisoft Montreal, and who is currently working on the upcoming game based on the 3D science-fiction film directed by James Cameron, *Avatar*. Check out PAGE 007 for our interview with David, and then, because one is never enough, flick to PAGE 019 for our interview with movie monster genius **Aaron Sims** of the Aaron Sims Company, whose company creates concept art through to fully rendered 3D models for the film, TV and videogame industries. With work on recent titles including *The Incredible Hulk* and *The Golden Compass* under his belt, we find out a little more about what happens at the Aaron Sims Company in this issue of 3DCreative. And whilst on the subject of feature films, we also introduce an article this month on the 3D animated film, *Igor*. Find out more on PAGE 027 about how Autodesk Maya was used in the bringing of *Igor* to life.

Our tutorials this month see the end of another 3DCreative era, as we welcome the final instalment and wave farewell to the mega tutorial series for 3ds Max, Cinema 4D, LightWave, Maya and Softimage XSI: Creating a Complete Scene from Concept to Render (PAGE 083). I'm sure you'll agree that our artists have done some fantastic work on this series over the past few issues, and for those of you who simply want more, more, more, then stay tuned for the February 2009 issue of 3DCreative where we will bring to you the first instalment of a 6-chapter series on creating a gothic church interior scene for 3ds Max, Cinema 4D, LightWave, Maya and – new to 3DCreative's tutorials – modo! Yes, that's right: modo will be amongst the tutorial line up in the February issue, so we hope you'll all give a huge welcome to our new modo tutorial artist next month. Also to be expected in the next big series is a chapter on ZBrush, and the final chapter will be an in-depth look into post-production in Photoshop. There's lots more to come from us this year – so stick around!

Our ZBrush tutorials this month include the speed sculpting of a space ninja by **Jesse Sandifer** and **Dalton Alves Muniz**, and **Rafael Ghencev** talks us through the creation of a character that he's badly beaten up – for purely artistic purposes of course (please note that no people were hurt during the making of this issue of 3DCreative). Check out PAGE 055 for Rafael's sculpted and textured character created entirely in ZBrush, and PAGE 045 for this month's speed sculpting challenge.

To round things up, we have two making of articles for you this month, the first of which has been created by **Nicolas Collings** on the creation of his *Orc Maori* character image (PAGE 063), and the second is a wonderful living room interior created by **Felipe Lobo** (PAGE 069).

As a final note, I hope your New Years have all kicked off well and we look forward to bringing you many more issues in 2009. Thanks for your support, and keep those gallery images coming in! Best wishes, ED.

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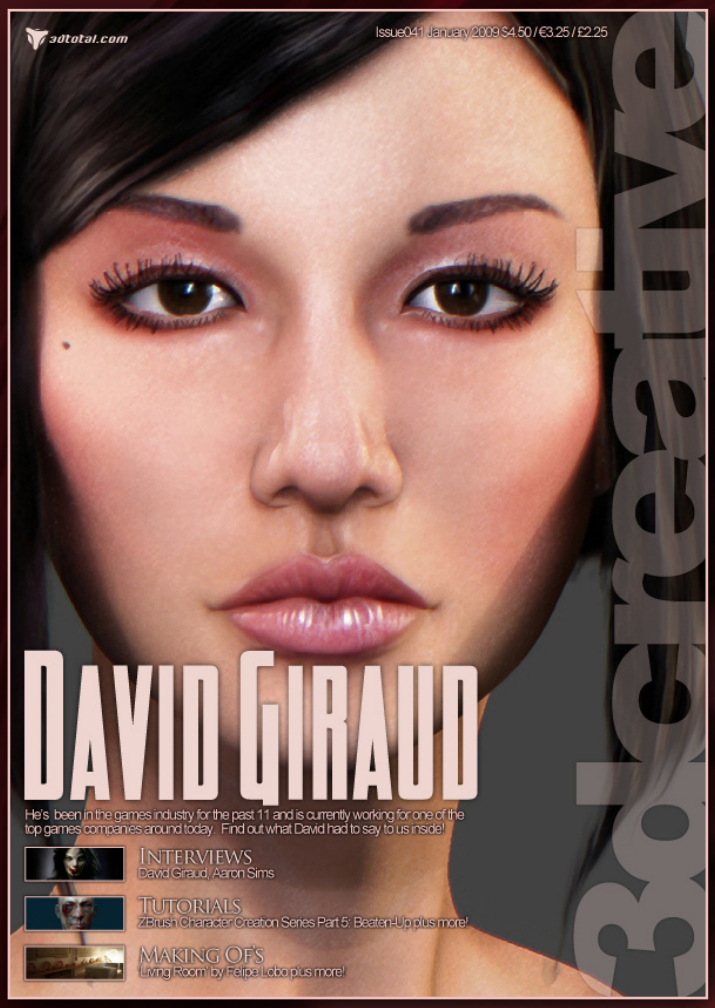
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To view the many double-page spreads featured in 2DArtist magazine, you can set the reader to display 'two-up', which will show double-page spreads as one large landscape image:

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3. Select Two-up Continuous, making sure that Show Cover Page is also selected.
That's it!

Contributing Artists

Every month, many artists around the world contribute to 3DCreative magazine. Here you can read all about them. If you would like to be a part of 3DCreative or 2DArtist magazines, please contact:

lynette@3dtotal.com

Aged & Weathered

The start of this tutorial series saw Richard Tilbury tackle the opening 3 chapters. Richard has now handed the Cinema 4D, Lightwave, Maya & Softimage XSI versions over to our latest tutorial artists; these wonderful people will be responsible for creating the remainder of the series. Richard will be continuing with the 3ds Max version.





Richard Tilbury



Has had a passion for drawing since being a couple of feet tall. He studied fine art and was eventually led into the realm of computers several years ago. His brushes have slowly been dissolving in white spirit since the late 90s, and now his graphics tablet has become their successor. He still sketches regularly, balancing his time between 2D and 3D.

http://www.richardtilburyart.com



Luciano Iurino

Started back in '94 with 3D Studio on MS-DOS as a modeller/texture artist. In 2001, he co-founded PM Studios and still works there as lead 3D artist. He also works freelance for magazines, web portals, GFX & videogame companies. He recently left the 3ds Max environment to move on to XSI.

http://www.pmstudios.it

iuri@pmstudios.it





Roman Kessler



A freelance 3D artist in Germany. In '93 he made his first 3D model using a shareware 3D software for DOS that was very limited. He got addicted and started with LightWave in '97. Since 2005 he has worked professionally as a freelancer. Besides client-based work, he also works on personal animation projects.

http://www.dough-cgi.de



Niki Bartucci

A freelance 3D modeller in Italy. She started working in the field of computer graphics in 2000 as an illustrator and web designer. In 2003 she started using 3D software, such as C4D & 3ds Max. In that year she worked on *ETROM - The Astral Essence*, an RPG video game for PC, developed by PM Studios.

http://www.pikoandniki.com

niki@pikoandniki.com





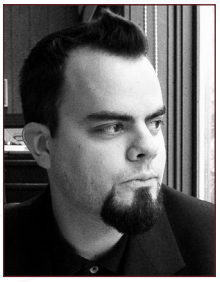
Giuseppe Guglielmucci



Freelance 3D modeller/animator. He began using computers with the epoch of the VIC-20 and Cinema 4D was his first 3D software. He started working in the field of CG in '99 in commercial design. In 2003 he worked on *ETROM - The Astral Essence*, an RPG video-game for PC, developed by PM Studios.

http://www.pikoandniki.com

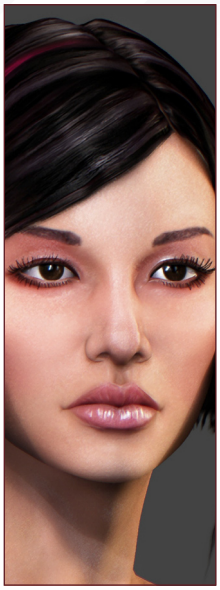
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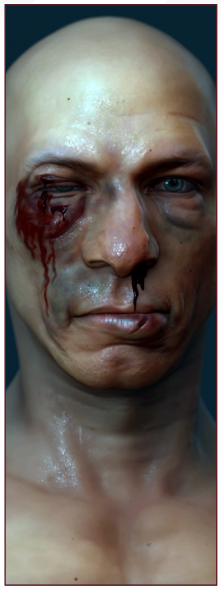


DAVID GIRAUD

Born in Paris in 1975 and has spent 11 years working in the videogame industry. He was a traditional artist before specialising in computer graphics, working in various positions from concept artist to animator. He later became a sculptor/concept artist. David has been at Ubisoft Montreal since '05 where he worked on Assassin's Creed. He's currently working on James Cameron's Avatar the game.

http://www.mojette.deviantart.com







RAFAEL GHENCEV

Is a 25 year old character artist, based in São Paulo, Brazil. He has had a passion for art since he was a young boy and saw his grandfather painting and drawing. He has since been searching to increase his skills and knowledge, and his passion for sculpture and drawing drives him to balance his studies between traditional art and 3D.

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JESSE SANDIFER

Is a self-taught digital artist with 8 years' experience. He co-owns Green Grass Studios in Dallas, Texas, which works on a variety of projects for films, games, television, commercials and in-game arena entertainment. Most of his spare time is spent participating in online challenges, doing personal artwork and dabbling with drawing and traditional sculpting.

http://www.jessesandifer.com

jessesandifer@gmail.com







DALTON ALVES MUNIZ

Is a freelance artist who has worked with some great agencies and productions in Brazil as an illustrator, modeller and art director, working on the likes of storyboards for TV commercials and illustrations. He is now focusing on games and characters, using programmes like XSI and ZBrush, and using his 2D skills in his 3D art.

http://daltonmuniz.wordpress.com/

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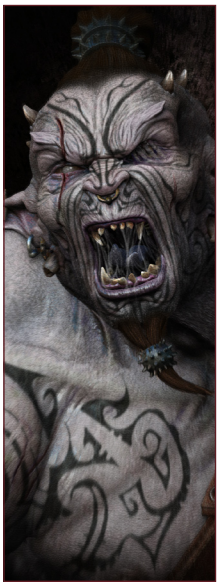


NICOLAS COLLINGS

Comes from Belgium and is currently living in Canada, working in the games industry as a character modeller at Ubisoft Montréal on a highly anticipated next-gen title. As a student back in 2004, he was immediately hooked by character art and has made it his own area of expertise over the past 4 years.

http://www.nicolascollings.com

ncollings1@hotmail.com





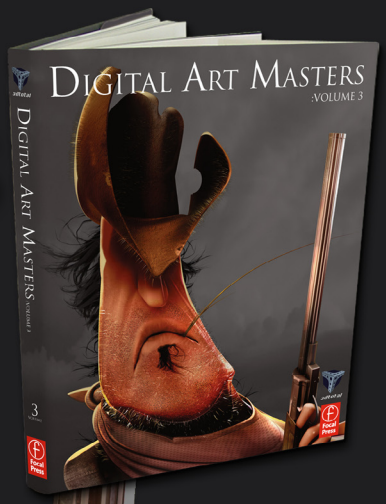


FELIPE LOBO

From Brazil, is 31 years old, and he's been working with 3D since he was just 18. He started in computer graphics by focusing on architecture. After graduating in engineering at Pontificia Universidade Católica of Rio de Janeiro, he went back to work with 3D and today has his own company, Image Society, where, in partnership with the Vision Lab/PUC-Rio, they develop videos and software.

http://www.imagesociety.com.br

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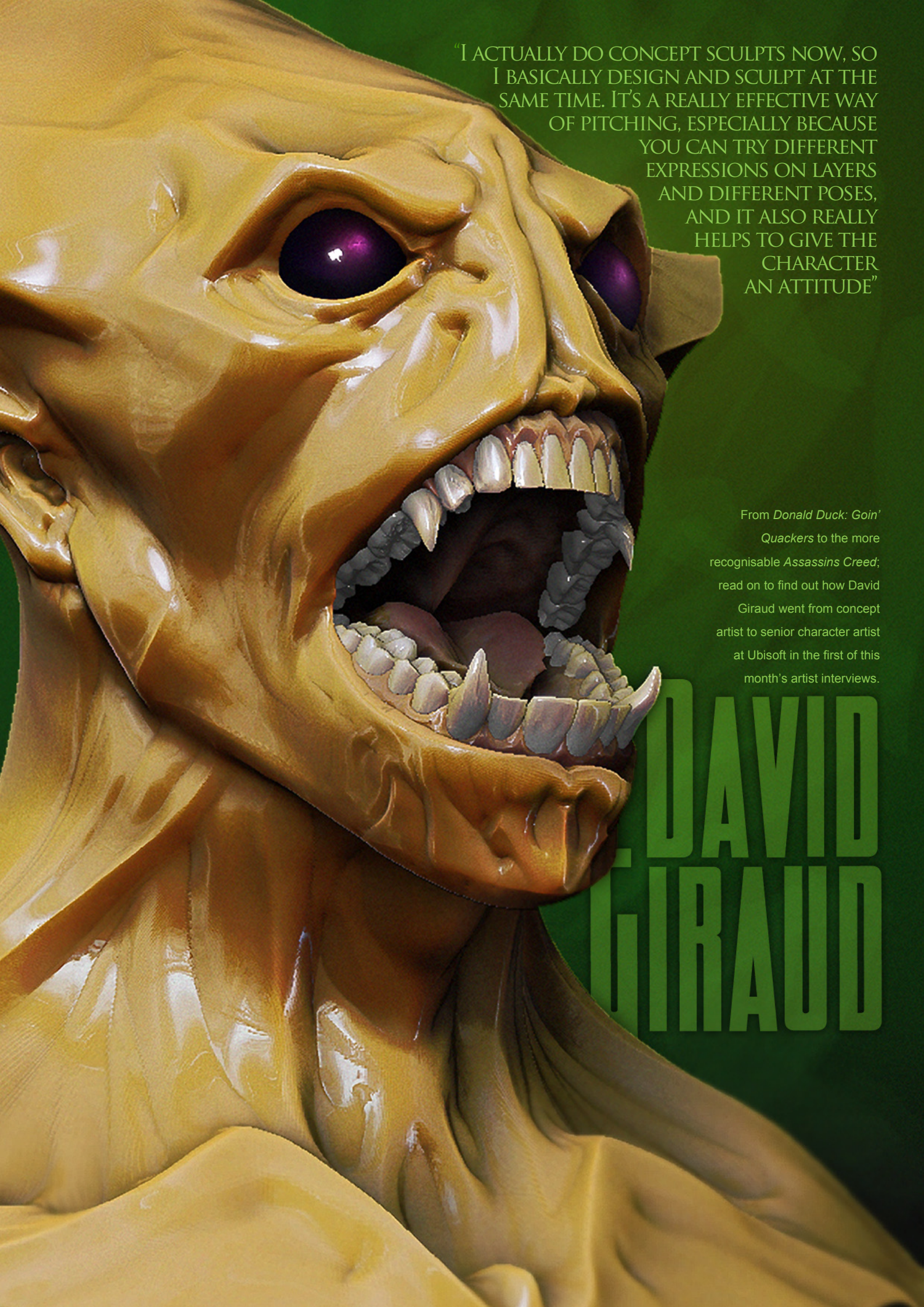
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From *Donald Duck: Goin' Quackers* to the more recognisable *Assassins Creed*; read on to find out how David Giraud went from concept artist to senior character artist at Ubisoft in the first of this month's artist interviews.

DAVID GIRAUD

DAVID GIRAUD



Hi, David. At what moment in your life did you start taking notice of 3D and realise that's what you wanted to do for a career?

I've always been attracted by art. At a very young age I remember doing drawings for my friends and even temporary tattoos. I had the same great art teacher in secondary school for three years and he really pushed me to do better all the time - but it was so much fun at the same time. In my family most of my uncles are engineers or they have real jobs (they never considered art as a job!) and I remember never knowing what else I could do aside from taking an artistic path!

I got into 3D because it seemed to be an artistic job, but one that I could actually make a living out of! This decision lead me to go to a specialised school in Montreal in 1996.

So after your time at school, what was your first job in the real world?

My first real job in the CG industry was in 1998, for the video game division of Lotto-Quebec. I worked there for two years. We were a very small core team - just five people at the beginning - so I touched on everything (except programming of course!). I animated, modelled, textured and lit the characters and backgrounds, and I also got to do game design, level design etc. It was a great first job, but I wanted to move on and work for a real game studio (not a government-owned Lottery Company). I got hired by Ubisoft Montreal in 2000 and the first game I worked on was *Donald Duck: Goin' Quackers* [Laughs].



You're currently a senior character artist for Ubisoft. Could you tell us how this job came about and how do you feel the company has benefited your career to this date?

I actually started as a concept artist, but at the







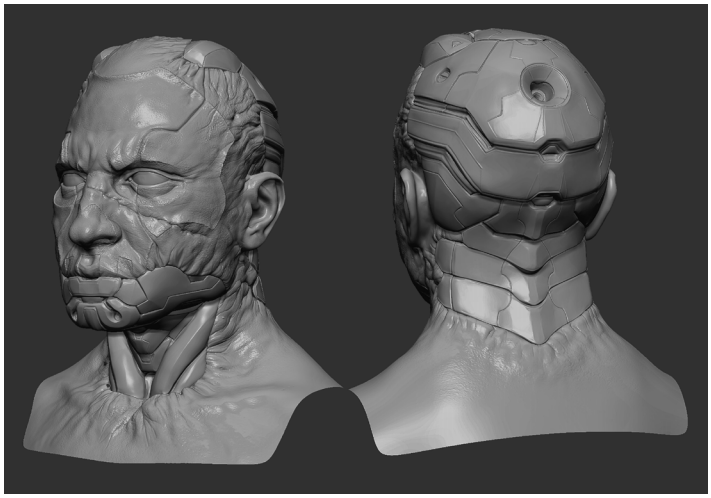
time we needed to be very versatile so I also started to make some 3D characters (my first real project doing 3D characters was *Splinter Cell*). I still did some concepts alongside the modelling, but with the arrival of sculpting programs like ZBrush, things really started to get interesting. I actually do concept sculpts now, so I basically design and sculpt at the same time. It's a really effective way of pitching, especially because you can try different expressions on layers and different poses, and it also really helps to give the character an attitude (the standard T-stance doesn't help to get something approved) [Laughs]. Working for a company like Ubisoft helped me to develop a good work discipline and taught me how to work as part of a team, which are really the essential component of all projects. If you can't work with other people, you won't get very far!



"THE FUNNY THING IS I NEVER LIKED THOR THAT MUCH, BUT THAT ULTIMATE VERSION KICKED ASS!"

You mentioned you design sculpt, is this something that most artists who use ZBrush do, or is this something that you've found works best with your working style?

Well, some character artist don't really design and they strictly follow the design or the photo references (which I also do when needed). In my case, I design because it is really what gets me going. I love sculpting, but I equally love making concepts. ZBrush is a really viable design solution and there are more and more concept artist that are reaching for it!



So what's a normal day like for you?

Depending on the mandate, sometimes I have to follow a concept and sometimes I get the freedom to really have fun creating something new! But my main focus these days is to make concepts full time again. I'll never stop sculpting, but I want to be able to continue creating most of all!

I've been a big admirer of your work ever since I saw your Thor image on ZBrush Central. Could you tell us why you decided to model this particular character from the huge line-up of Marvel characters?

I've always been a big fan of the Marvel universe; my older cousin used to have entire boxes of comics! He decided to give them to me when I was a kid and he got me totally hooked. A few years ago I saw the ultimate Thor version that Joe Madureira did and I just had to make my interpretation of it! The funny thing is I never liked Thor that much, but that ultimate version kicked ass!

"THE FREEDOM TO CREATE IS WHAT CAPTIVATES ME ABOUT THIS SOFTWARE. IN FACT SOMETIMES I JUST FORGET IT'S SOFTWARE; IT'S BECOME AN EXTENSION OF MY CREATIVITY"

Besides Thor you've also modelled Wolverine, Venom and Ironman. What other characters would you like to have a go at modelling?

I really don't know - there are too many cool heroes to choose from! I will probably focus more on my own designs and stories from now on. I'm not excluding the possibility of making heroes again, but I would love to do it as a contract since I don't have much free time with my little family (wife and daughter).

You're quite a big user of ZBrush by the looks of your portfolio. What is it about this program that's captivated you?

The freedom to create is what captivates me about this software. In fact sometimes I just forget it's software; it's become an extension of my creativity. The fascinating thing about ZBrush is that I think in the same manner as when I model with real clay. The tools are a bit different, but the approach is the same; it's all about the form and the emotion you're trying to convey!

I have to ask this question: Have you ever used Mudbox, or are you a "diehard" fan of ZBrush?

I did try Mudbox and it's a great tool, but I really prefer ZBrush, I'm just happy that digital sculpting programs exist and competition make those programs even better!

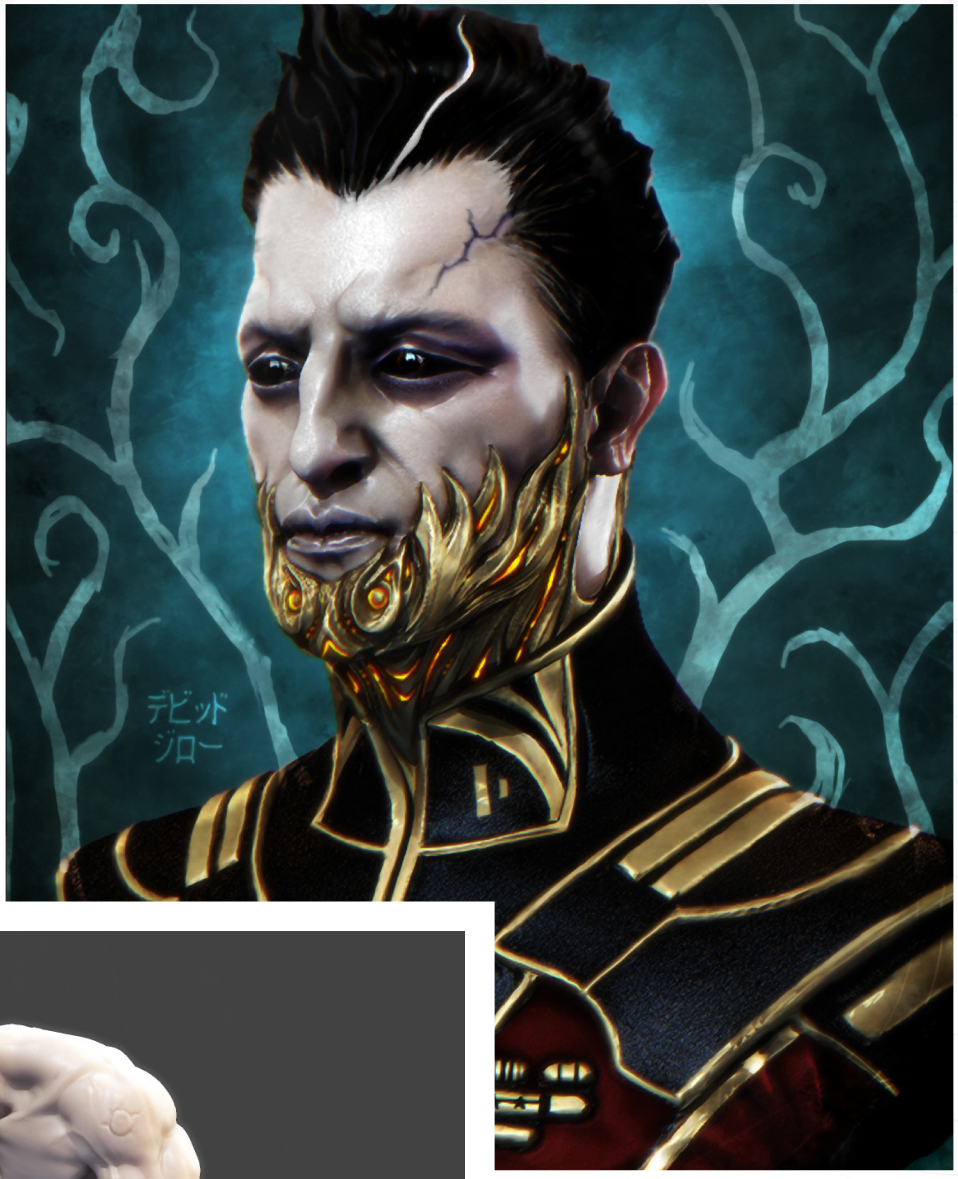






One of your latest pieces is “Harry”. Could you tell us a bit about this character and how you came to sculpt him?

Harry is the hero of the art book from Steambot that’s due out for Halloween. I had the chance to become friends with those awesome artists and the collaboration just became obvious!



> “THE SYMBOL IS MY NAME IN JAPANESE. EVEN THOUGH I’M NOT JAPANESE, I ALWAYS LOVED JAPAN AND IT’S A GREAT CULTURE.”

So I decided to sculpt Harry from the concept of Joel Dos Reis Viegas’ “Feerik” and Thierry Doizon’s “Barontieri”. I eventually asked Offload Studios to print the statue to be presented at the Siggraph 2008 and they did a bang up job - thanks again guys! It’s now in my office back home and there is also a copy of Harry on display at the Pixologic office in California.

http://steambotstudios.com/

http://offloadstudios.com


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Well it has been a really pleasure chatting with you and I wish you all the best for the future. One last question before we call it a day: I’ve noticed a little symbol appearing on your work. Could you tell us a bit more about it?

Thank you very much for the opportunity and the symbol is my name in Japanese. Even though I’m not Japanese, I always loved Japan and it’s a great culture.

DAVID GIRAUD

For more work by this artist please visit:

http://mojette.deviantart.com/

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Robert Bourgeault, CG Artist **Metal Gear Solid 4 (VG)** Josh Herrig, Artist | Yuta Shimizu, Artist **The Mummy: Tomb of the Dragon Emperor** Aruna Inversin, Digital Compositor **Night at the Museum** Allen Holbrook, Animator | Adam Yaniv, Character Animator | Chad Moffitt, Animator | Kristin Sedore, Lighter **Persepolis** Marianne Lebel, Animator **Pirates of the Caribbean: At World's End** Ben Sanders, Character Animator Allen Holbrook, Animator | Aruna Inversin, Digital Compositor **The Pirates Who Don't Do Anything: A VeggieTales Movie** Mike Dharney, Animation Supervisor **Reign of Fire** Lino DiSalvo, Animator **Resident Evil: Extinction** Joshua Herrig, Visual Effects Artist **Robots** Arun Ram-Mohan, Additional Lighting **Rome** Teh-Wei Yeh, Matchmove Artist **The Santa Clause 2** Aruna Inversin, Digital Compositor Daniel Osaki, Visual Effects Artist **Scarface (VG)** Maya Zuckerman, Mocap 3D Generalist **Shrek the Third** Rani Naamani, Animator **Shrek the Third (VG)** Samuel Tung, Technical Artist **Sin City** Michael Cozens, Lead Animator **Smallville** Geeta Basantani, Lead Compositor **Speed Racer** Aruna Inversin, Digital Compositor **Star Wars Episode III: Revenge of the Sith** Andrew Doucette, Character Animator | Nicholas Markel, Pre-Visualization **Star Wars: Knights of the Old Republic (VG)** Arun Ram-Mohan, 3D Artist | Jessica Mih, Level Artist **Stargate SG-1** Aruna Inversin, Digital Compositing Artist | Daniel Osaki, Visual Effects Artist | Shawn Walsh, Digital Effects Supervisor **Stargate: Atlantis** Daniel Osaki, 3D Animator | Megan Majewski, 3D Animator | Alec McClymont, 3D Artist **Sweeney Todd: The Demon Barber of Fleet Street** Jami Gigot, Concept Artist **Transformers** Allen Holbrook, Animator | Henri Tan, Creature Technical Director

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VFS student work by Jeff Plamondon



AARON SIMS

"I've had some wonderful experiences working with directors who have fascinating ideas about why a character might look or feel a certain way, such as when I worked with Steven on A.I."

The "Aaron Sims Company" is a fully-equipped character design studio for film, TV and video games, where they provide simple concept sketches of characters, through to fully-rendered 3D models. Having worked on some of the most famous feature films of recent years, such as *The Hulk*, *The Mummy* and *The Golden Compass,* we were itching to find out more!

AARON SIMS





Hi Aaron, thanks for taking the time to talk to us. Let's start by getting everyone up to speed with what you're doing, so how long have you been running your own company? What exactly are the goals of your company and can you tell us a few of the recent projects you have worked on?

I have been working on my own for about two years now, and it's been fantastic. I've learned so much from the great effects mentors, such as Rick Baker and Stan Winston, and I've also had the chance to work with some of the most amazing directors. It was time to venture out on my own and adapt to the changing industry, especially when it comes to characters and visual effects.

You mention the changing industry - can you elaborate on what the main parts of this were that you wanted to follow with your own business?

The visual effects industry is complicated, saturated, and unwieldy in terms of the amount of work that can be involved in any job. I could see early on that the competition for jobs would result in longer hours and a harder approval process, since the studios know that the team will work to keep the gig.



For me, working with the director in an efficient, creative way allows me to sidestep the complications of the actual VFX, but remain potent in the design and influence of the characters by working on the front end. I often stay on throughout a project to work with the VFX Supervisor as a character supervisor, making sure the right parts of the visual and physical parts of the character are worked out in a cost effective way.

As a specialist character designer I want to find out a little about how your mind works! If I was to give you the following briefs, what would your working progress be?

a. Creatures that has harnessed the power of the wind.

b. Sea animals that evolved as the seas evaporated.

c. Delicate, intelligent beings that walk on water.

In all of these cases, I would try to interpret what the director is telling me, as well as having an intense research period. At the same time, I would try to come at the design process from a variety of angles, letting inspiration guide me where possible. It's always important to me that


the aaron sims

the creatures have some grounding in reality, but we are always surprised to find out how bizarre that can be!

Take a famous character, Abomination from *The Incredible Hulk,* for example. What are some of the biggest challenges you faced with this concept?

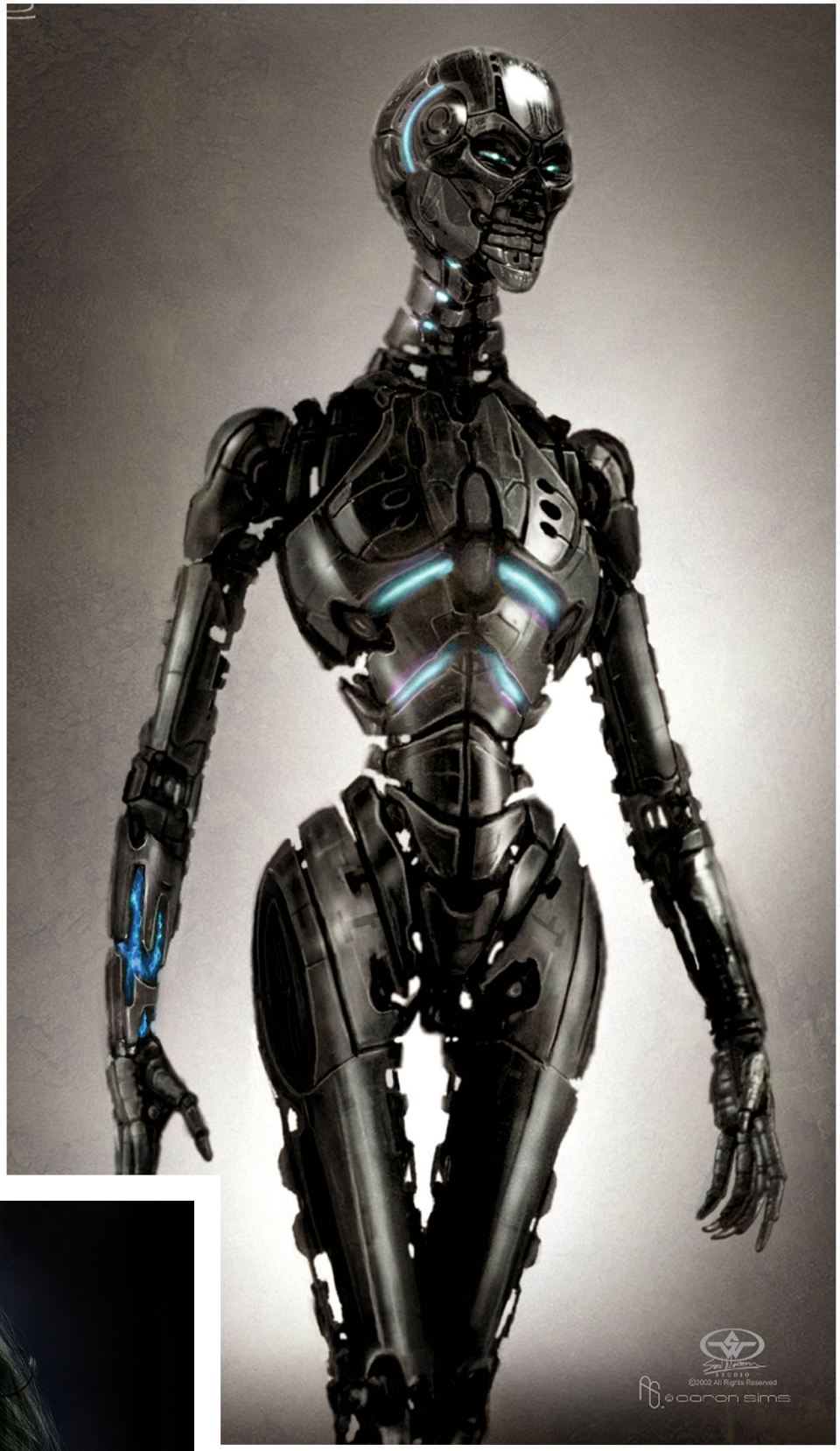
In this case the creature already had an established fan base. Coupled with the intense thematic ideas that the director wanted to incorporate into the film and I certainly had my work cut out for me!

You inspire a lot of artists, but who inspires you? And besides other artists, where else do you find your inspiration?

There are so many amazing and talented artists out there, I couldn't begin to name them all! I'm also inspired by storytellers and directors who are interested in characters in unusual ways. I've had some wonderful experiences working with directors who have fascinating ideas about why a character might look or feel a certain way, such as when I worked with Steven [Spielberg] on *A.I.*

With a mainstream project such as *A.I.* can you sum up what a freelance concept designer's job entails? Are you on set? Attending meetings with big names? Or sending emails with attachments throughout?

I usually work out the parameters of the characters with the director and then begin the process of defining them within the limitations of the show; budget, time, physical requirements, etc. Once that process begins, I remain with the director or PD until we get the studio guys on board. From there I consult throughout the production to make sure the division of work is smart and efficient. Throughout the process there are tons of meetings, variations






the aaron sims



and presentations. We usually work through high security ftp servers or directly through couriers.

I imagine the development of the ZBrush software has had a big impact on the way you work. What features of this software especially appeal to you and are there any features or tools that you still think it lacks?
The best part of the software is that the team keeps developing it, and they really respond to the artist's voice. There are so many great features too; simple ones like symmetry or mirror, and then of course more complicated shapes and sculpt tools, as well as the export options.

Working on a big feature is a dream for most artists, as I am sure it was for you "back in the day". Can you somehow sum up how it feels, and if there are any lows as well as highs?
I am humbled and grateful for the experiences I have had, and I am so lucky to be able to work so hard in a field I absolutely love! The only low I can think of is having to turn down a project because of scheduling. Everything else is a definite high!

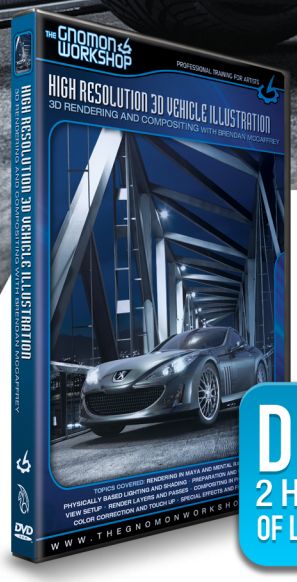
Aaron Sims

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Introduction

3D Environment Lighting is a downloadable tutorial ebook series, where over the course of the six chapters we will be detailing techniques on lighting an environment under a number of different conditions. Each chapter will cover a step-by-step guide to setting up lights, aimed at portraying the scene in a specific manner.

Chapter 01: Sunny Afternoon
Chapter 02: Twilight
Chapter 03: Moonlight
Chapter 04: Electrical
Chapter 05: Candlelight
Chapter 06: Underwater

Environment Lighting
Designed & Modelled by Richard Tilbury

Created for the following programs
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Cinema 4D by Giuseppe Guglielmucci & Niki Bartucci,
Lightwave by Roman 'dOUGh-CGI' Kessler
Maya by Florian Wild,
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"With a combined team of 250 artists working in their offices in Paris, France and Ho Chi Minh City, Vietnam, Sparx Animation Studios created 70 environments, 125 characters and 250 objects for this ambitious 3D animated feature film."

IGOR

bunchback of another name

Sparx Animation Studios uses Autodesk Maya to help Exodus Film Group and director Anthony Leondis bring *Igor* to life.



(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios

IGOR
hunback of another name

It's been said that behind every successful man, there's a woman rolling her eyes. Director Anthony Leondis' *Igor* begins with a similar premise: that behind every mad scientist obsessed with creating life, there's a long-suffering laboratory assistant who knows he can do it better. Before the film's titular hero could create life, however, somebody had to create him. Exodus Film Group called on one of France's leading animation studios to get the job done.

With a combined team of 250 artists working in their offices in Paris, France and Ho Chi Minh City, Vietnam, Sparx Animation Studios created 70 environments, 125 characters and 250 objects for this ambitious 3D animated feature film, starring the voices of John Cusack, Molly


(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios


(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios

Shannon, John Cleese, Steve Buscemi, among others. Released in the UK on 17th October 2008, *Igor* was completed in just 19 months using a production pipeline based on Autodesk Maya 3D modelling and animation software.

Set up

"*Igor* is the first, big, internationally distributed, animated film to be handled from start to finish in France," says Jean-Phillippe Agati, CEO of Sparx. "From the conception to final visual and audio post-production, everything was created by Sparx and our partners. We can't help but be proud of that fact. Our production pipeline is based on Autodesk Maya, which is our principal animation tool."


(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios


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Sparx began their adventure with *Igor* in the late autumn of 2006. Once Thierry Malherbe, Sparx's head of CG and Fabrice Delapierre, Sparx's CG supervisor learned the film's main storyline and scope, they initiated the design of the major characters and environments, and began assembling what they knew would become a very large CG team. They also knew the sheer size of the project and the tight timeline would require the most efficient workflow.

"We needed a production pipeline and workflow that was efficient and reliable," says Malherbe. "Sparx has a long history with Maya, but we had to be sure it was the best software for a project as important as *Igor*. We spent several weeks evaluating all the animation solutions on the market, and we came to the conclusion that a project this ambitious needed Autodesk Maya."


(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios

Having settled on their choice of 3D software, the Sparx Animation team got to work. According to Delapierre, creating the various teams for the project was eased by their choice of software:

"We saved a lot of time because so many animators out there are already familiar with Maya," he says. "For *Igor*, we simply created specific teams for different parts of the overall pipeline. The entire production, from A to Z, was done using Maya."

The Challenge: From Ideas to Igor

As any director will tell you, bringing a team together is one thing. Bringing a project to life is quite another.


(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios


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(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios

"On the morning of 6th November 2006, we had no idea what the main characters would even look like," says Agati. "Seven weeks later, we had a team of 20 people creating *Igor's* universe. By mid-January 2007, we had 10 people modelling characters and by May, we'd created a 3D animatic with music and sound. Still, we weren't sure whether the scenes that we were working on would be major or minor to the film as a whole, so we had to make everything as detailed as possible. Creating an animatic in parallel with development meant Thierry and Fabrice had to be able to modify animations easily, and insert new characters and environments, as well as the director's subtle touches."

As complex as it was to bring *Igor* to life, it was still more challenging bringing life to Igor. More than anything, *Igor* is the story of essentially human characters feeling human emotions, all of which needed to come through in their faces. Nowhere was this element more important than for the character of Eva, the imposing, vaguely neurotic and ultimately loveable "monster" Igor creates.

"A turning point in the film is when Eva evolves from Igor's monster into a beautiful, sensitive heroine," says Malherbe. "All of that transformation had to come through in her facial expressions. We were striving for a subtle facial quality, much like you might see in a film from the 1950s - one with strong expressions, realistic nuances and wrinkles, and an exceptional level of quality."



(c) 2008, Exodus Film Group, image courtesy of Sparx Animation Studios

The Result

In total, the Sparx animation team created some 1,437 shots, including a climactic battle scene involving huge crowds, an enormous stadium and some serious render time.

"Our challenge was to create this complex, seamless scene as quickly as possible," says Delapierre. "Maya enabled us to get exceptional quality on this huge scene, exceeding even the director's hopes and expectations."

From the start of the project, Malherbe and Delapierre knew they'd be relying heavily on Maya's integrated mental ray renderer, but that it would require specific enhancements and features for use on Igor.

"We worked hand-in-hand with the Autodesk R&D teams to ensure the best integration of mental ray and the most efficient optimisation of our workflow," says Malherbe. "We had lots of ideas to improve our productivity, and we've been able to work closely with Autodesk to implement those ideas into future versions of the software. That's very gratifying."

"Maya is robust and reliable, solid and stable," says Delapierre. "You can really push the software to the limit and rely on it throughout a project. We were able to make quick corrections to the animation, characters and textures based on the subtle suggestions of the director and artistic director. We had the stability to run the kind of tight production that would only have been possible using Maya."

Jean-Philippe Agati,
CEO, Sparx Animation Studios

For more information, please visit:
http://www.sparx.com/


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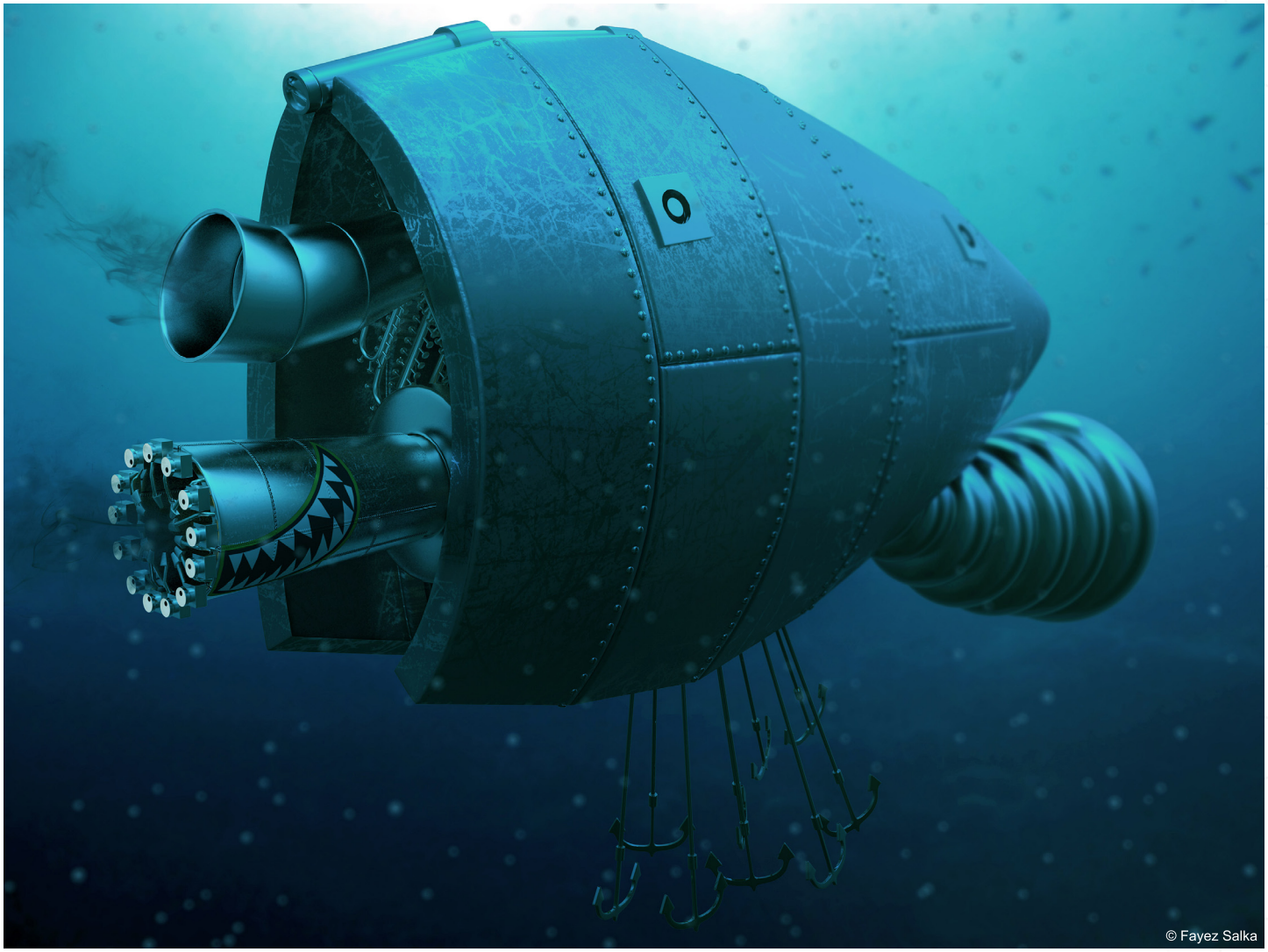
My Wife Has Gone

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Creating a Complete Scene From Concept to Render

This series will run over the next six months and will endeavour to give you an insight into how a fully realised 3D scene may be arrived at from beginning to end. The tutorials will attempt to address the key issues and techniques appropriate in achieving this, from concept sketches through to building the 3D scene, mapping and unwrapping, texturing and eventually to lighting and rendering, culminating in a final render. The emphasis over the course of the series will be on the texturing, which will be covered in two of the six instalments, and principally the aging and wear of materials.

3DSMax — 3DSMax Version — Page 83

Cinema 4D — Cinema4D Version — Page 87

Lightwave — Lightwave Version — Page 93

Maya — Maya Version — Page 101

Softimage XSi — Softimage XSi Version — Page 107

This Month :

Part 6: Lighting & Rendering

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Match-moving and Stabilization



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SPACE NINJA

Welcome to the brand new Speed Sculpting section of 3DCreative magazine. Each month we will give two talented ZBrush sculptors a brief and a base mesh from which they are to interpret and speedily sculpt a model within a suggested time. Here we will show the stages of creation of their “speed sculpts” in the form of mini tutorials. You will often find free movies to accompany these tutorials, and we hope that this new series will be successful and thrive for many months to come!

This month our two skilled speed sculptors are **Jesse Sandifer** and **Dalton Alves Muniz**, who are tackling the brief:

Space Ninja

If you’d like to follow along with these tutorials, we have provided the same free base mesh for you that we also gave to these two artists for their own speed sculpts. Download your own base mesh from the **Free Resources** logo below and get sculpting! Enjoy!





SPEED SCULPTING

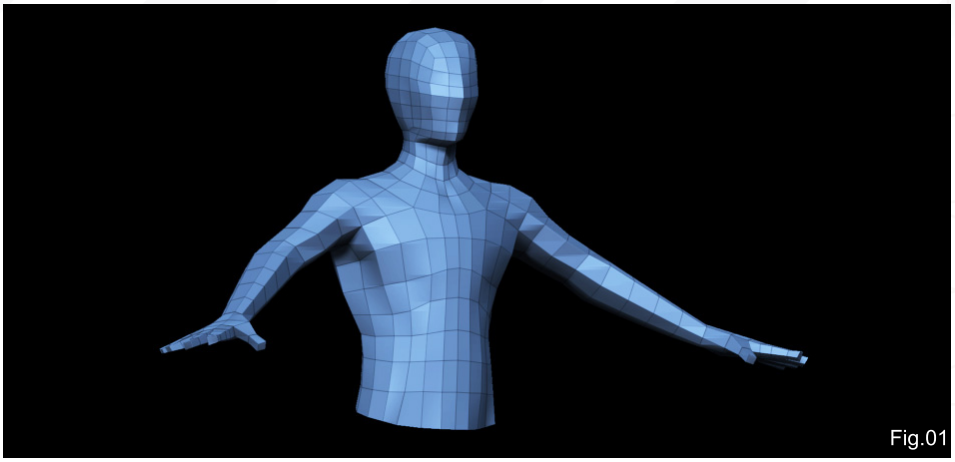
JESSE SANDIFER

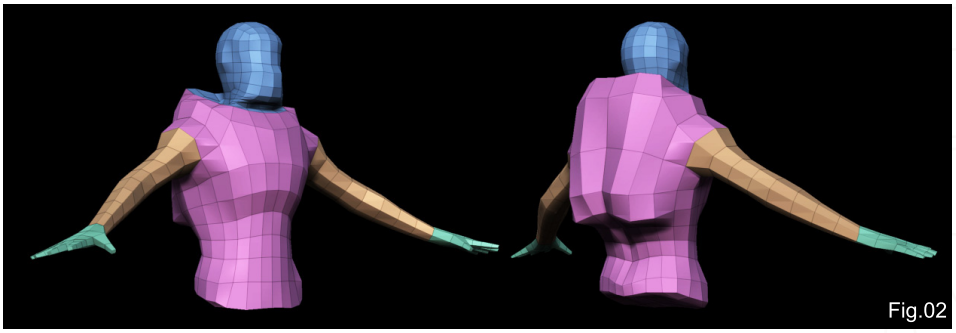
CREATED IN:

ZBrush

INTRODUCTION

When I was presented with the topic for this month's tutorial, I had a hard time at first thinking of a concept I wanted to develop. There's something about "space ninja" that seems a bit of a challenge to define. But what's good about that is that it presents an idea that combines two different genres of character to create something visually interesting. So the direction I went with for this concept was to bring together some hard surface spacesuit designs with some ninja style cloth.


Fig.01


Fig.02

STEP 1

To start, I knew I wasn't going to need eyes or mouth topology and elected to use a very similar mesh that was provided for a past Threedy.com challenge that didn't have the eyes or mouth built in (**Fig.01**). First, I assign polygroups to the head, torso, arms, and hands so I can isolate these areas on command throughout the process. I then turn on symmetry in the X-axis and start to use the move brush with the focal shift at around 40 to change the silhouette to the form I had in mind. This is when I start to block out major design areas. In addition to the Move brush, I introduce the use of the Clay and Inflat brushes to help define where the suit forms are, like the chest and breathing apparatus (**Fig.02**). Just like in traditional poly-modelling, I continue to spin the mesh around and check the form of everything in all directions. Once I'm happy with that, I start to go up through the levels of subdivision and define these major forms that I previously developed. Secondary forms like the visor, breathing tubes, the jetpack, and shoulder pads are focused on in their basic forms using the Clay, Inflat, and Clay Tubes brushes (**Fig.03**). I also give the arms a quick pass to give them basic form without really getting into muscle flow. The lower torso gets some quick attention, using Clay Tubes and Pinch brushes (**Fig.04**).


Fig.03

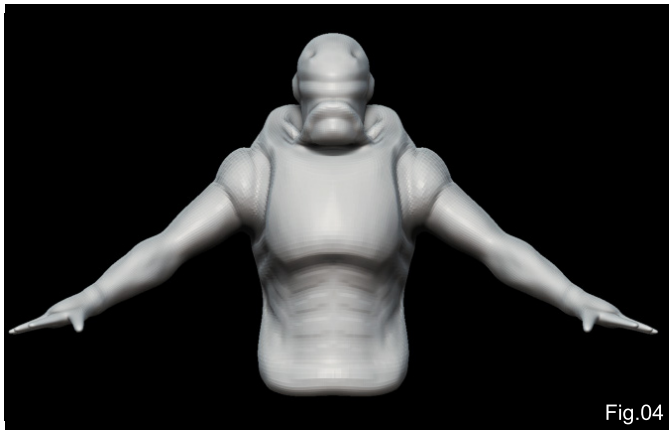

Fig.04


Fig.05

STEP 2

For smoother areas, I use the Flatten brush with the lazy stroke on and a bit of the smooth brush with the Z intensity at around 30. I haven't done a whole lot of hard surface modelling in ZBrush, I'll admit. Sometimes ZBrush is thought of as being difficult to achieve good results in with hard surfaces, but I found it to be just fine as long as you do it patiently and methodically

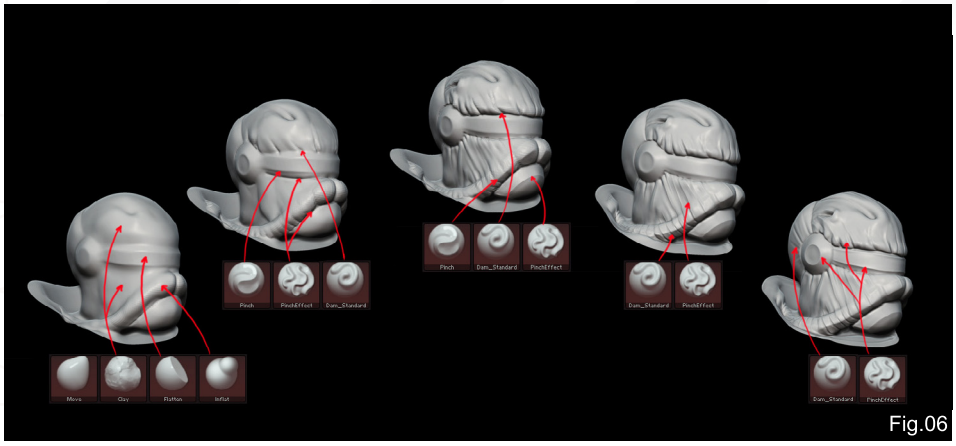

Fig.06


Fig.07

(**Fig.05**). The key is to use that lazy stroke with the lazy radius at above 8 or so. The higher the number, the longer the smooth drag effect it will have. So with that effect on, the Flatten brush will make a nice smooth stroke. Also do these in steps as you go up the levels of subdivision; I leave the highest level of subdivision to the fine details only. I don't do major strokes at the highest level most times because it ends up getting lumpy and you get caught in this painful back and forth of smoothing and flattening that only seems to get worse as you go along. Perhaps some of you have gone through this!

Another method I use is to incorporate the Pinch Effect brush that I've used in past 3DCreative tutorials. With that same Lazy Mouse (or a real steady hand), you get a nice tight raised pinch that gives you an automatic edge. The Dam standard brush, created by Damien Canderle, is another handy brush that can give you the same effect. I use this brush with the Alt key (or just the ZSub mode if you prefer) to start digging some creases that meet up with the visor, and then I inflate those areas out to give them form and to indicate cloth characteristics. I mask off the visor to help me to not affect that flattened out form. When doing these folds and wrinkles, I just start going for it and try to keep the look natural and think about how the tension and compression would change the cloth's form. It can be quite difficult to get right and it's something I continue to work on. It's especially hard to get perfect in a speed sculpt and I really had to keep myself from getting too ingrained in getting it all fancy and perfect for sake of time.

STEP 3

I know I want the top part of the head to look cloth-like, and the mouth and cheek area to look like it's stretching around the breathing tube and tucking into the hard surface breathing apparatus (**Fig.06**). I just need to get enough to indicate this and then move on to the next area. Then I go around the torso area and continue to use the Flatten, Pinch, Pinch Effect (created by Fatmir Gjevukaj), and Dam standard brushes to get the hard surfaces some tight edge definition. Once happy with those parts, I start working on the area between the main suit and the shoulder pad pieces. I want that part be very cloth-like and bunched up. Masking off the hard surfaces that surround this transition area, I then continue to use the Inflat and Pinch Effect brushes to get some inward and outward wrinkles going. I go back and forth using the brushes in ZAdd and ZSub (I just use the Alt key for this) and finish out the basic folded forms. It's a bit of tight area so I have to be careful not to overdo it.


Fig.08

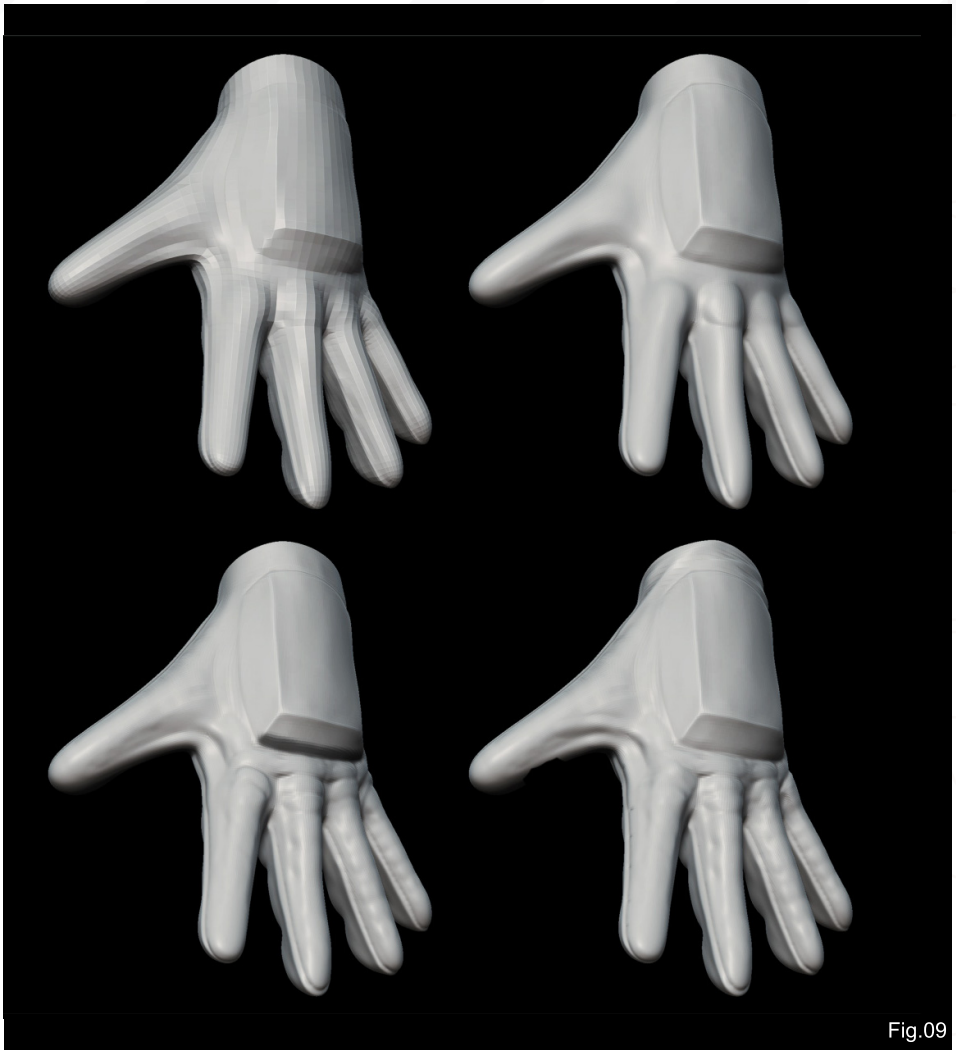
STEP 4

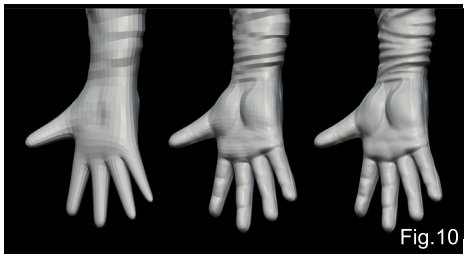
It's about time to pose this guy because I am about to start working on the arm wrinkles and those will depend on the angle of the arms. Normally in speed sculpting, I like to pose at the start, but sometimes I feel the need to keep it static until a certain phase in the sculpting session. I want to make his pose look ninja-like, in that he's trying to be stealthy and he has his arms out ready for action. I imagine him coming up to a corner in a room and peering around it (**Fig.07**). Of course, I use Transpose Master to pose him out and I do it on the two lowest subdivisions. There will probably be areas of cleanup to do after getting him posed (where

parts got stretched or squeezed) but that's okay. The breathing tubes give me a bit of a trouble to fix, especially one that gets pinched as his head turns. There'll always be fun spots to fix like that when speed sculpting, so always account for that.

STEP 5

Once I get him posed, I move onto the arms and give him just a little more muscle definition, since the cloth is a bit tight. Then using the Pinch Effect brush, I start stroking in wrinkles with a bunched up style. As I go along, some wrinkles work great and some look out of place. It's always a work in progress with wrinkles and I get the feel of how they work together as I go along. So if they don't work, I just smooth them out and try another approach. I wanted to have some larger wrinkles on the upper arm and some tight pinched wrinkles toward the lower arm and bunch them up as they get closer to the wrist. The Pinch Effect gives me a good start for lying in wrinkle paths and then I use the Inflat and Clay brushes to give more form and volume to certain areas of transition, so that it doesn't just look like a bunch of lines. I also try


Fig.09


Fig.10

to keep the wrinkles interlocking, meaning they kind of crisscross or flow into each other. Again, this kind of stuff can be very tempting to work on for hours so I quickly realise I need to move on to the other arm. I have to go asymmetric with the arms because of the differing tension and compression angles. It adds more work for me but I think it helps the overall look of the character and helps it to be more convincing (**Fig.08**). I apply the same technique of using the Pinch, Inflat, Clay, and Pinch Effect brushes on the other arm, but it's a bit different because of the elbow bend. After getting all the wrinkles in, I go back to the head and smooth out some of the wrinkles there because I think it should look a bit more stretched, which means smoother areas. I also give some Pinch Effect strokes to indicate tight wrinkles again. The same thing applies to the right arm and I decided to smooth out some wrinkles around the elbow because the tension would make it a bit smoother and the inner elbow needed more folds from compression. Again, not perfect and perhaps a bit too busy or inaccurate in areas, but good enough for a speed sculpt I think.

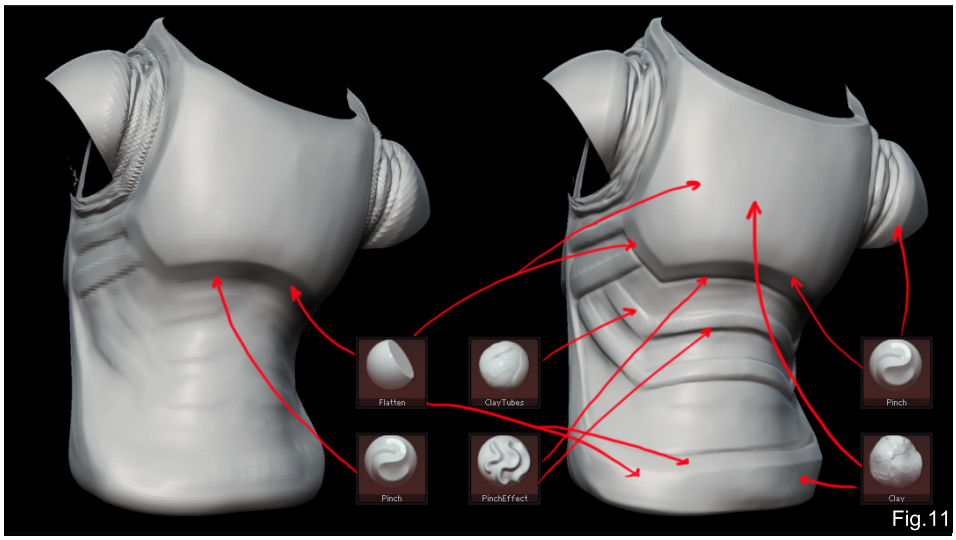


Fig.11

STEP 6

I then head off to the hands, which haven't had any attention in the whole sculpt session. Since I'm short on time I have to keep it simple. I block in the top of the hands with a hard surface design and Clay brush in the rest of the pads of the fingers and palms. Using the Pinch Effect brush again, I dig in the creases in the fingers and palm, and then stroke in a seam all the way around the perimeter of the hands. I try to keep everything else on the hands kind of "space-suit" like. Then I blend the wrist wrinkles into the hand design. The same thing applies to the other hand (**Fig.09** & **Fig.10**). With time really running out, I try to get in some hard lines on the lower torso area to further the suit design and help the flow of the character (**Fig.11**). I finish up by doing some quick fixes on different areas of the character and doing a final check throughout.

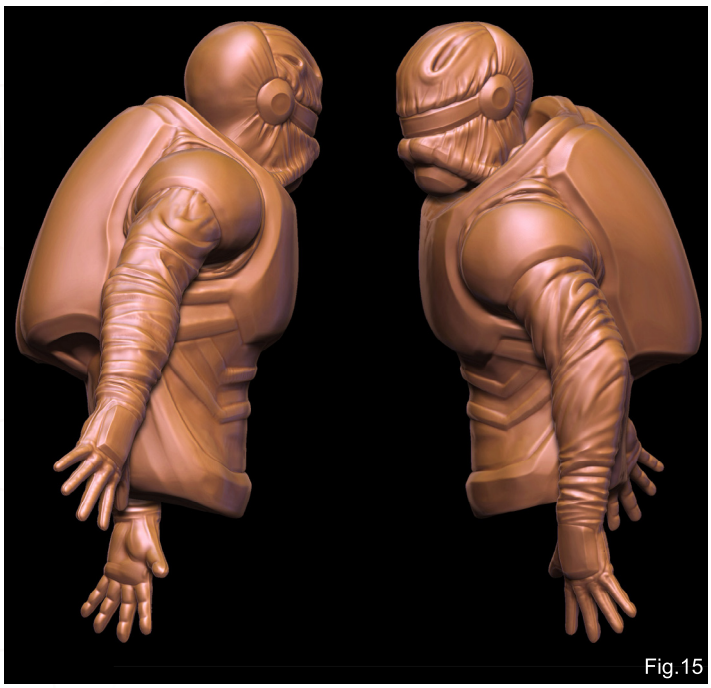

Fig.12


Fig.13


Fig.14

CONCLUSION

All in all, the whole session took around five hours because I got caught up in wrinkles and hard surfaces. I really enjoyed the challenge of trying to define this character with both a sci-fi design and the ninja cloth. It was great practice to try and do the folds and wrinkles in a time crunch and I think it definitely pushed me to continue to intuitively figure out flow and realism in an efficient manner. Here are the final shots of the model (**Fig.12** – **Fig.15**). Thanks for reading!


Fig.15

Note from the Editor: Jesse Sandifer has kindly provided five movies for download with this tutorial, which you can download my clicking on the free movies icon at the end of this tutorial. So for a real insight into Jesse's working practice, click to download now and enjoy! Please note that the movies have been supplied as .wmv files of up to 30MB each, so please be aware of their sizes when downloading the files. And of course: enjoy!

JESSE SANDIFER

For more from this artist visit:
http://www.jessesandifer.com
Or contact:
jessesandifer@gmail.com



DALTON ALVES MUNIZ

CREATED IN:

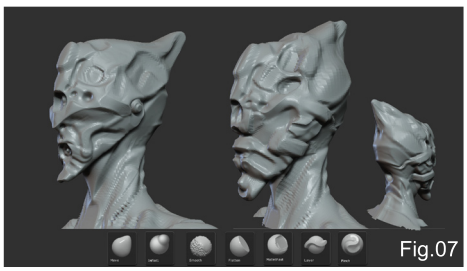
ZBrush

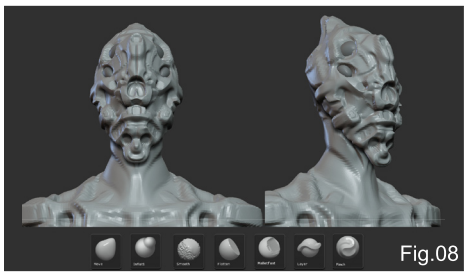
SECTION TITLE

Hello everyone, this month's theme for the Speed Sculpting tutorial is to make a "space ninja"! I found the theme very interesting, as well as challenging – after all, what exactly is a space ninja? What are the characteristics that would in fact make him a space ninja? To answer such questions, I started to sketch some drawings and put some ideas onto paper (**Sketch.01**). This sketching stage is vitally important – with it I can save many hours of work on the model because I've already defined the concept, giving me a clearer idea of what I want for the appearance of my warrior-type character and the direction I want to take.

I'm going for something pretty high-tech here, something which improves the performance of the ninja, making him capable of survival even in the most extreme hostile conditions – such as space!

Okay, so let's start the speed sculpt. Starting with the base mesh provided, I divide it six times


Fig.07


Fig.08

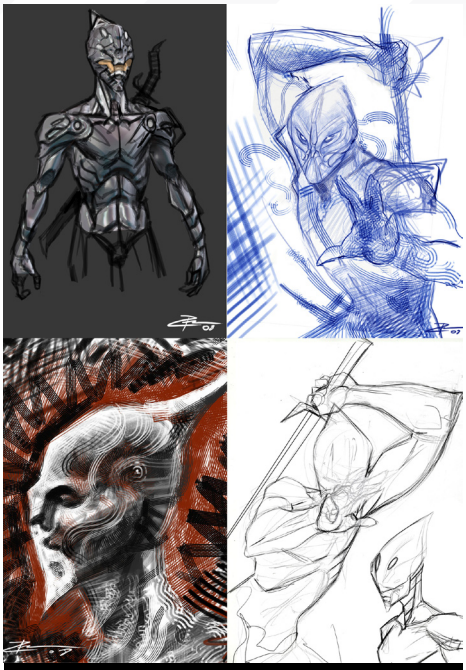
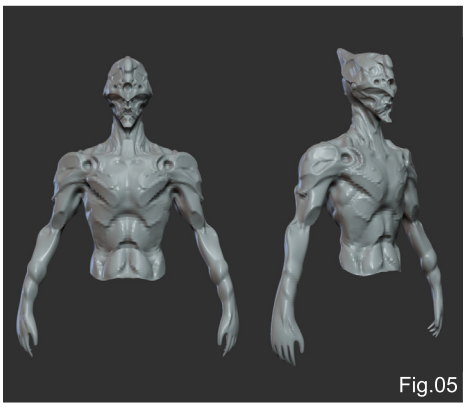
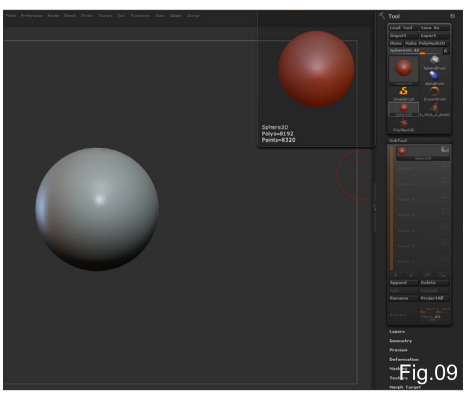
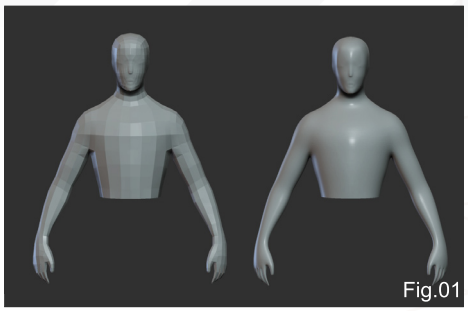

Sketch.01


Fig.03


Fig.05


Fig.09


Fig.01

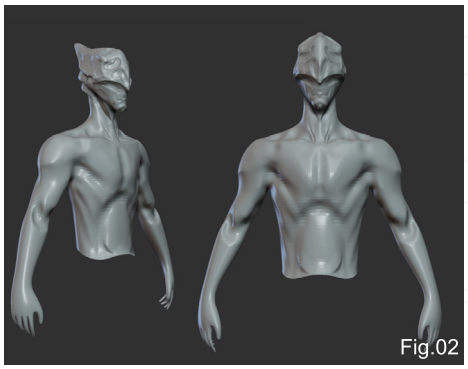
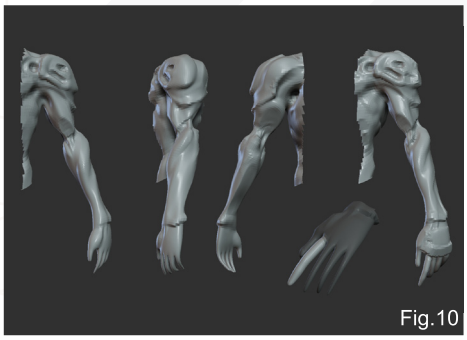

Fig.02

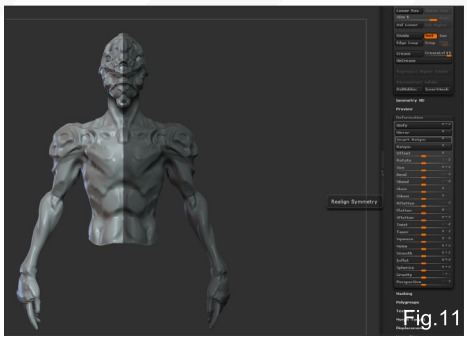

Fig.04

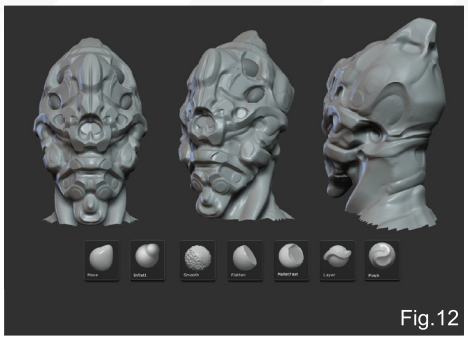

Fig.06

(**Fig.01**) and return it back to Division 3 to begin shaping its basic form; at this stage I'm using the Move brush. It is very important to say here that you should always make the basic shapes and proportions in the initial divisions, leaving the upper levels for the fine details. To divide the model use the Ctrl + D command, between the divisions use "D", and use "Shift + D" to return.

I start to sculpt the basic form of the muscles and head using more angular and sharp shapes – less organic, more like armour over his body (**Fig.02** – **Fig.05**).


Fig.10


Fig.11


Fig.12

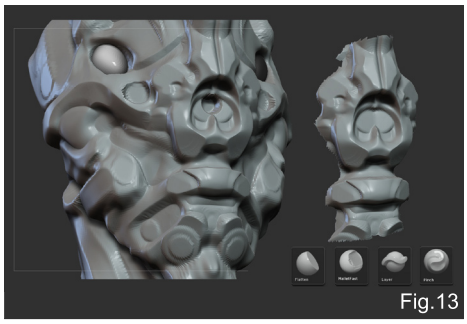
Not being too satisfied with the face, I adjust it to keep it closer to my original concept sketches (**Fig.06**).

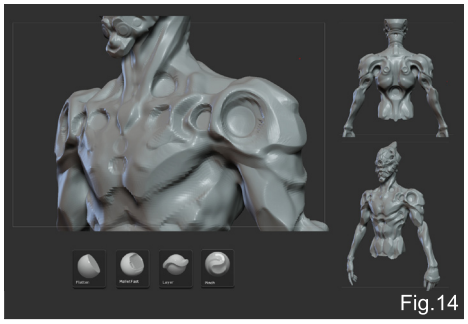
At this stage, I'm setting the design of the ninja using mainly the Mallet Fast, Flatten and Pinch brushes, which are perfect for defining forms with sharp corners and edges (**Fig.07** & **Fig.08**).

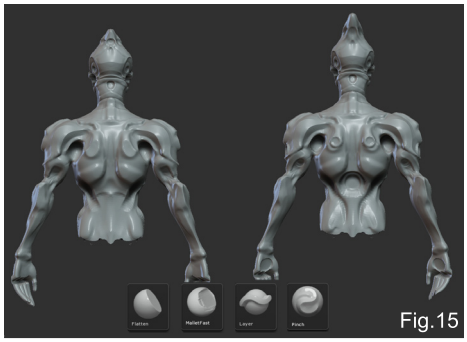
I fill the holes in the head with the ZBrush sphere primitive, which you can access by going into the palette tools, selecting the sphere and then pressing the Make PolyMesh3D button and adding it as a SubTool, positioning it as desired (**Fig.09**).

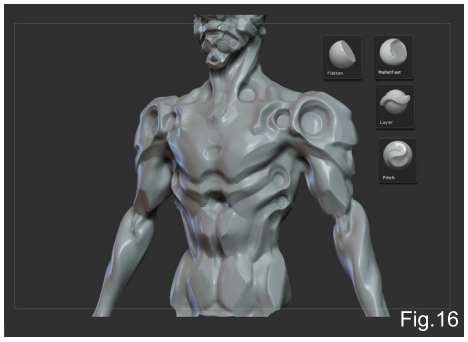


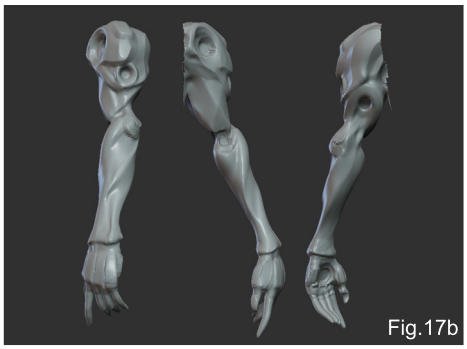
Fig.17a

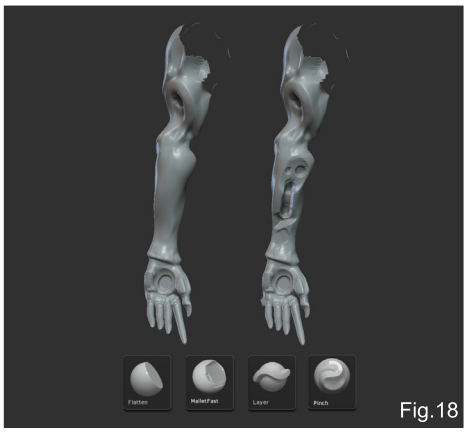

Fig.13


Fig.14


Fig.15


Fig.16


Fig.17b

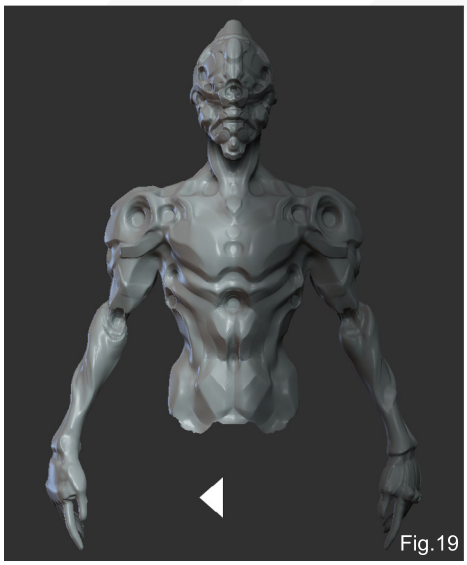

Fig.18

I'm defining the shapes of the arms now, hiding the rest of the model (Ctrl + Shift) (**Fig.10**), and then transferring the work done to the other side using the Smart Resym command under the Deformation tab (**Fig.11**). To use it you must isolate the area to be transferred with Ctrl, and then press the command once for each division.

Focusing on the face of the ninja now I start to define the head design (**Fig.12**). I also detail the organic area of his face (**Fig.13**).

Right now, I'm working with the Layer brush a lot, which is essential when working on this aspect of layers in the armour (**Fig.14** – **Fig.18**).

Again, I use the Smart Resym command (**Fig.19**).


Fig.19

Moving on to the higher levels now, I'm finishing work on the ninja's armour (**Fig.20** – **Fig.22**). At this point I make some tests with materials, choosing one of Ralph Stumpf's sets.

A final adjustment to his face and he's almost ready (**Fig.23** & **Fig.24**), leaving just only one final – and crucial – detail: his sword!

To create a sword, I use the same procedure as I used for the sphere: I go into the tool tab, but this time choose the 3d cube (**Sword.01**). In the Initialize tab, you can set the number of faces, sides and the size of the primitive cube, so for this concept I change it and make it as thin as a blade, and then add it as a SubTool.


Fig.26

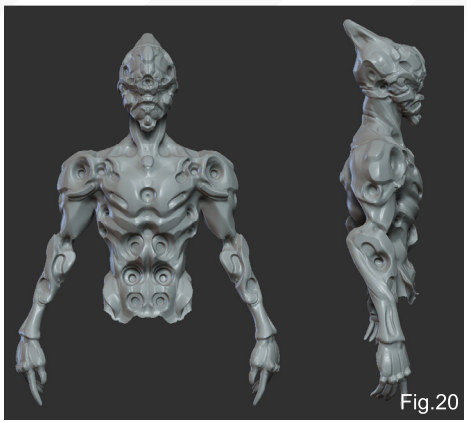
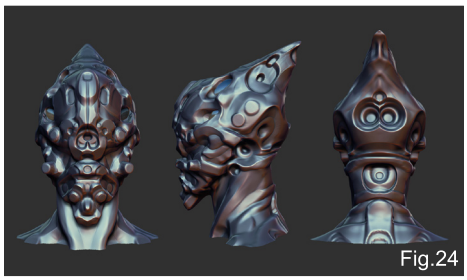

Fig.20


Fig.22

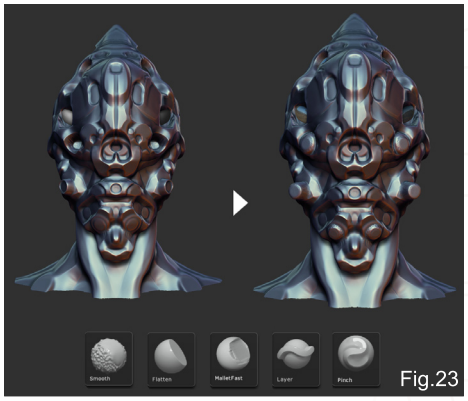

Fig.24


Sword.02

After the fast sculpting work on the sword, I use the extract command to create geometry around it. To do this, I isolate the desired area with Ctrl and then press extract (**Sword.02**). Finally, I enter the Move and Rotate modes and simply place the sword on his back, and then he is finally ready!

Here is our Space Ninja, done in about 4:30 hours (**Fig.25** & **Fig.26**). I hope you have enjoyed it!


Fig.21


Fig.23

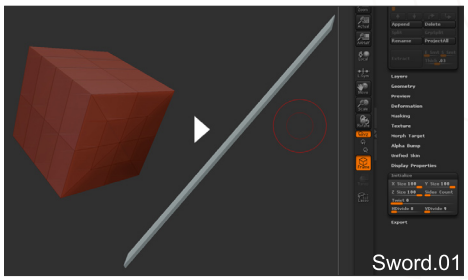

Sword.01


Fig.25

Note from the Editor: Dalton has kindly provided us with two turntable movies of his finished speed sculpt, which you can download by clicking on the Free Movies icon. Enjoy!

DALTON ALVES MUNIZ

For more from this artist visit:
http://daltonmuniz.wordpress.com/
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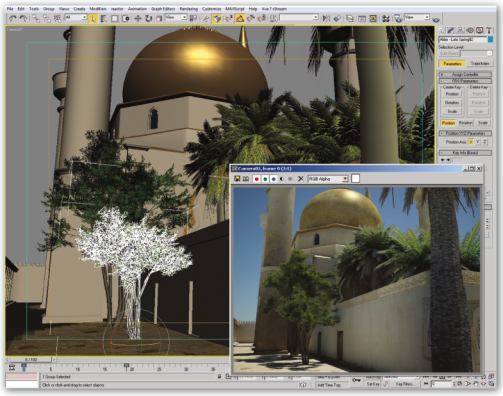
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"A BAD SHAPE MEANS A BAD MODEL. THE DETAILS ARE NOT SO IMPORTANT HERE; A CHARACTER WITH A BEAUTIFUL SHAPE AND FEW DETAILS IS MUCH BETTER THAN A BAD SHAPE WITH LOTS OF WRINKLES AND PORES. SO TAKE YOUR TIME"

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Beaten-Up Character Creation ZBrush

Welcome to the new ZBrush Character Creation tutorial series. Each month, Rafael Ghencev will take us step-by-step through the transformation of a clean, generic head base mesh into a character type of 3DCreative's choice! We thought that topics such as a wrinkled, gaunt, old man, a steroid-pumped guy with popping veins, an extreme tattooed and pierced dude, and even some real extreme cases of personality disorders in the form of a vampire and a werewolf, would be fantastic for detailed sculpting work! On top of all these, Rafael thought it would be cool to sculpt and texture Frankenstein, and we agreed, so we've even thrown that one into the line- up for you as well. So stay-tuned over the next nine months to see Rafael at work and to learn a thing or two about detailed sculpting in ZBrush for characters. This Fifth tutorial covers the development of a beaten-up man.

Enjoy!

SEPTEMBER 2008
Part 1: Old / Gaunt

OCTOBER 2008
Part 2: Obese

NOVEMBER 2008
Part 3: Steroid-Pumped Guy

DECEMBER 2008
Part 4: Extreme Piercings & Tattoos

JANUARY 2009
Part 5: Beaten-Up

FEBRUARY 2009
Part 6: Zombie

MARCH 2009
Part 7: Vampire

APRIL 2009
Part 8: Werewolf

MAY 2009
Part 9: Frankenstein

Beaten-Up

Created In:

ZBrush

Concept

This month I've been asked to model and texture a "beaten-up" character in ZBrush. I decided to create a boxer with some injuries. Before starting the modelling process, I did a little research about typical fighting injuries, and then later did some more research to get some references for the fighter too. With the concept starting to mature, I began the modelling process.

Sculpting the Basic Shape

The first thing I did was to play with the Move brush to find a better shape for my character. It's very important to concentrate on this part of the process. A bad shape means a bad model. The details are not so important here; a character with a beautiful shape and few details is much better than a bad shape with lots of wrinkles and pores. So take your time at this part of the process. Afterwards, with a Standard brush, I'll start to add more volume and information to the shape, but right now I'm just working on the basic shape (**Fig.01**).

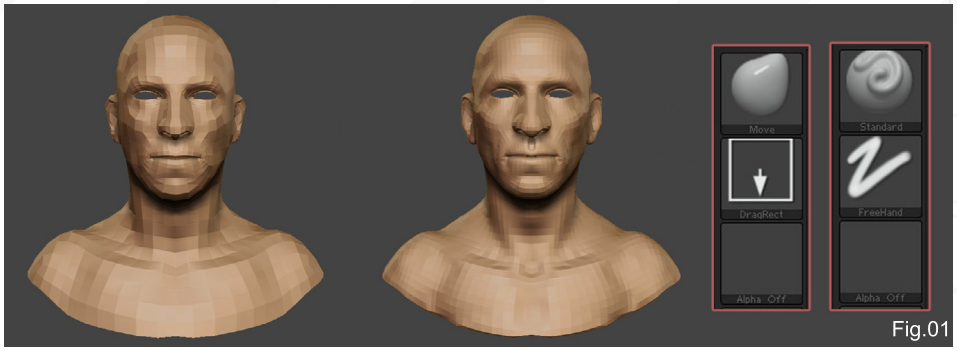


Fig.01

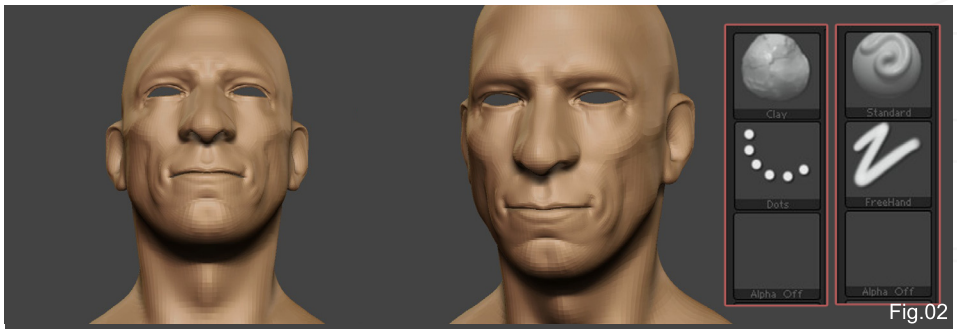


Fig.02

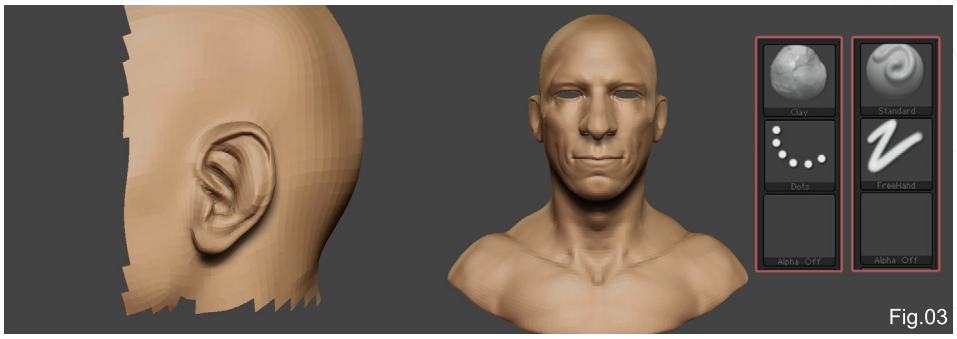


Fig.03

With the basic shape ready, I pick the Clay brush and start to add the bone structure and muscle volume. Here I can block some big wrinkles using the Clay and Standard brushes. With the same brushes I then start to refine the shape of the nose and the mouth. I add in the sternocleidomastoid muscle in his neck here as well (**Fig.02**).

Next, I isolate the ear in order to start work on it. I basically use a Standard brush on the ear (**Fig.03**); with the Clay brush I'll be blocking his body muscles in, like the chest and shoulder muscles. He's a boxer, remember, so his muscles will be strongest in the shoulder region, like the trapeziums and deltoids.

Refining the Shape and Adding Details

With the shape looking good I can work more on the specific areas, like the eyes, nose, mouth and chin. With the Clay brush I start to refine all

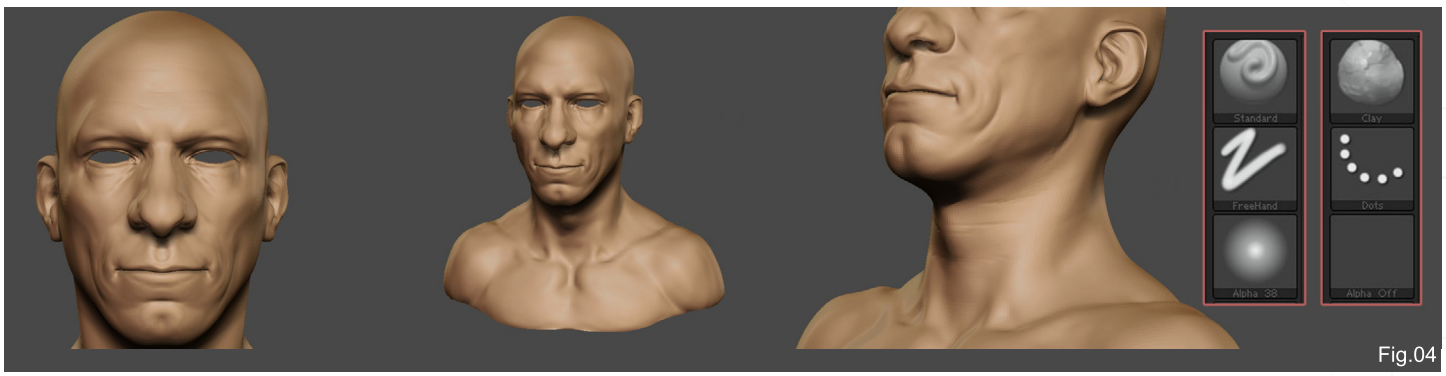


Fig.04

of these parts, giving a little more subtle detail to his face. I can also refine the shape of the ear here, too (**Fig.04**).

I then pick the Standard brush with alpha 38 and start to mark some wrinkles, like the eyebrow wrinkles, neck, etc. It's still only marks at this stage though; we're not going into all those finer little details yet.

Final Details

Here the shape is finished and I can start to add detail to my character, so I continue now with the Standard brush and refine the wrinkles, working details into his mouth, eyes and neck areas. For the body I also add some more detail to his muscles and some of the folds of skin between the chest and arms, to achieve a more natural look. For this I use the Inflat brush to approach the normals and to make it look like the skin is pressed against more skin (**Fig.05**).

Now it's time to add more detail to his face. I decide to make his face with lots of little injuries and marks, so I choose the Clay brush with a low radius and start to draw lots of irregularities. Then I change the stroke to spray, pick alpha 38 and add some pores to his face (**Fig.06**).

Asymmetry and Injuries

It's time now to put the injuries onto his face. So I turn off the symmetry here and start with the Move brush to take away his symmetry. I twist

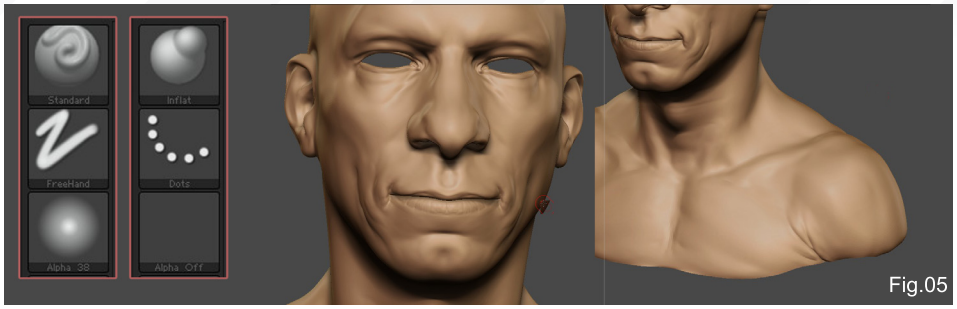


Fig.05

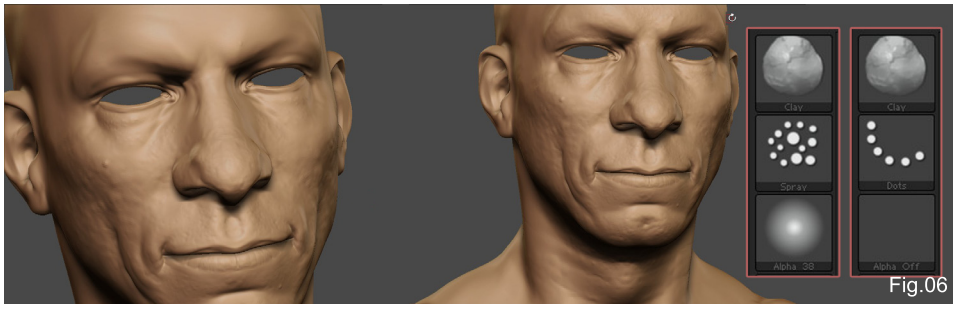


Fig.06

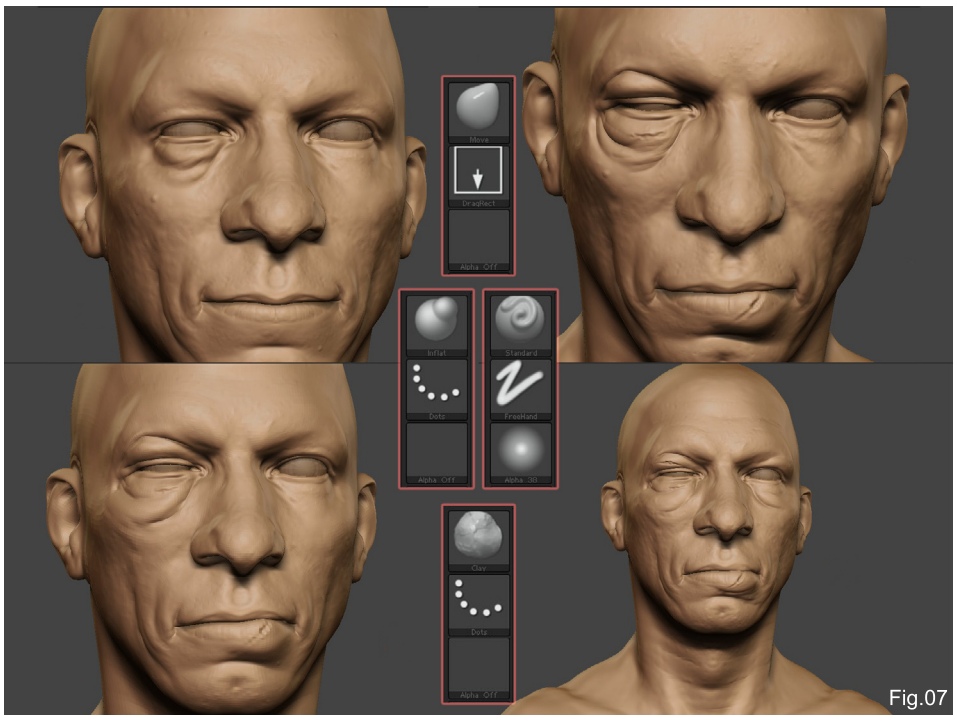


Fig.07

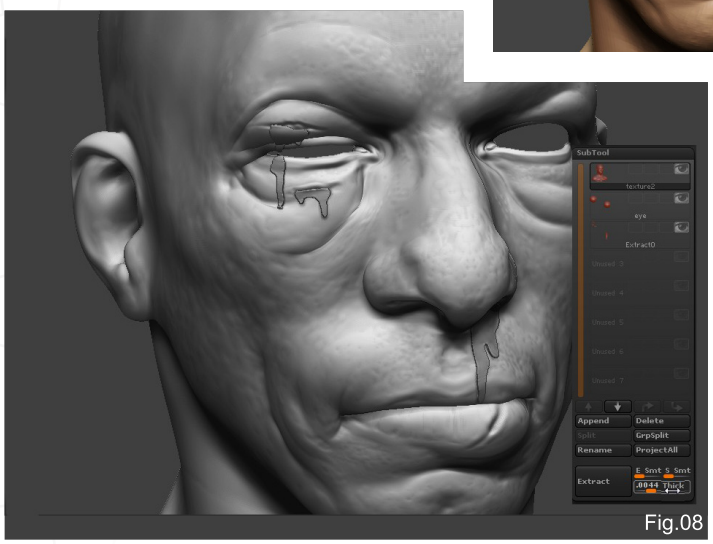
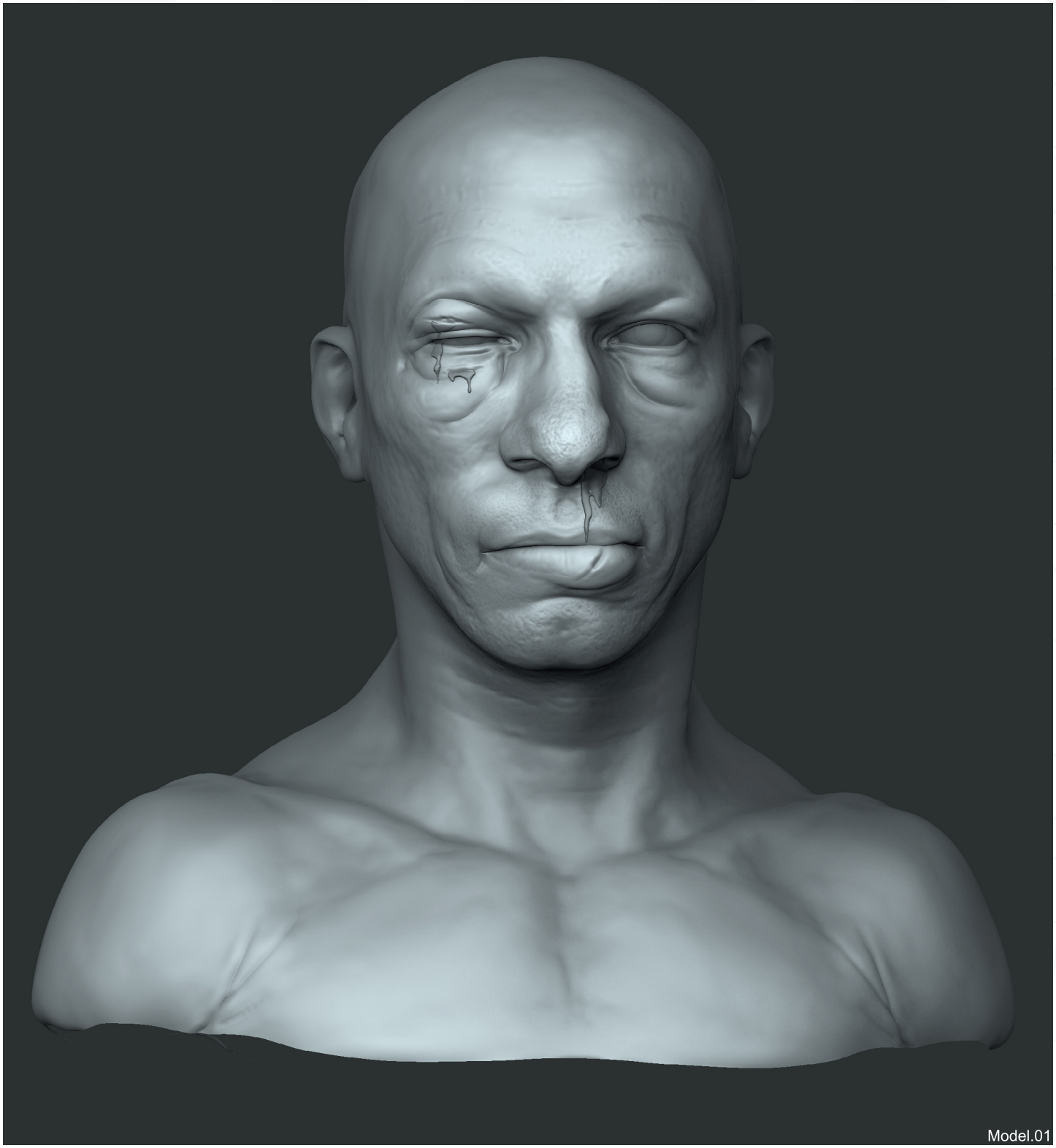


Fig.08

his nose a little and his mouth, too. Then I start with the Clay brush and the Standard brush to add the swelling around his eyes and his mouth, as if he's taken a real beating. Then, with the Inflat brush, I dilate these areas to make it look like there's a lot of pressure behind the skin (**Fig.07**).

The Blood

Here I'll show you a great tip about how to create drops of blood! Pressing the Control button, I paint some areas like little blood drops. Then, in the SubTool palette, I decrease the thickness value and press the Extract button. The selection will create a new tool with the same shape of this selection. You can then model in the new tools to give a more natural look (**Fig.08**).



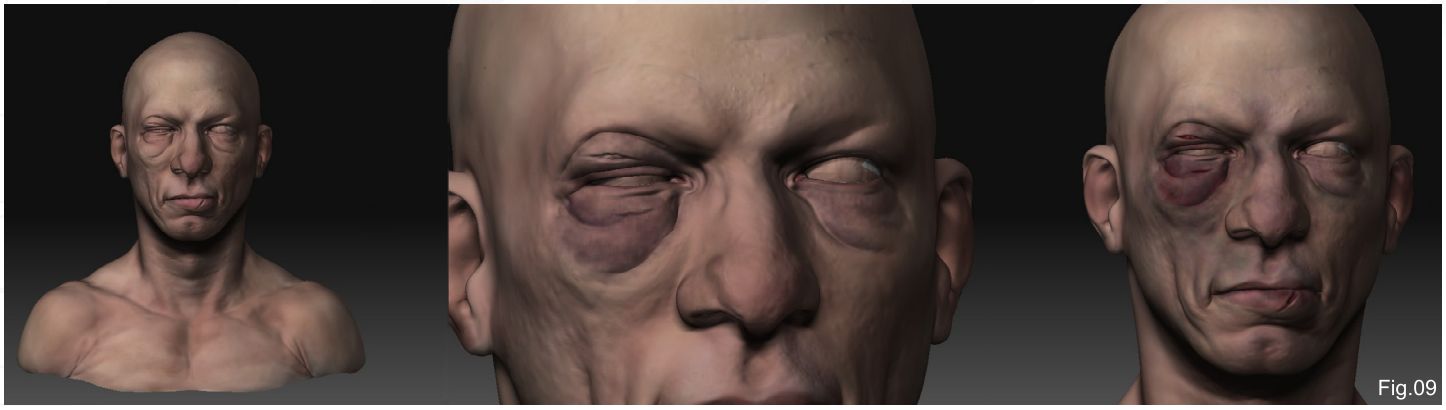
Model.01

Finally, here is the result of the sculpting process (**Model.01**).

TEXTURING

At this point I decide not to lose time by starting from a new texture and so I select a base texture that I painted for the last character, and change it to suit my needs for this character piece. I pick a simple brush in the Projection Master and start to paint some colour variations onto his swelling eyes. I then pick a purple colour and start painting his injuries. I find a dark green colour to paint around his swellings ideal to show the bruising.

At the top and bottom of his right eye, I paint some cuts in using a red colour, as if he's received lots of punches (**Fig.09**). At the bottom of his eye I paint some blood dripping down his face (**Fig.10**). For the eyes, I project them and paint many different shades of red around the pupil (**Fig.11**).


Fig.09

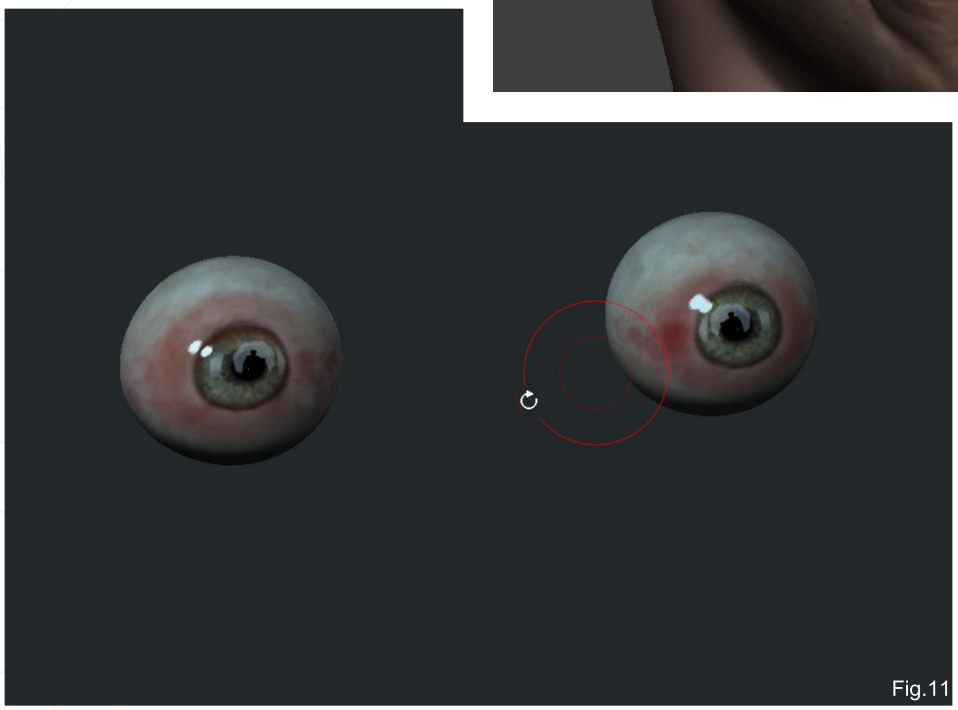
For the shader, I once again pick a TriShader from the Shaders palette and blend it with a free skin shader that you can find in the ZBrush central MatCap library. For the eye and blood drops, I use the toy shader.

For the lighting setup, I increase the rays to 230, the aperture to 102, and shadow length to 300. I turn on the ZMode to fake GI. I turn the fog on in the render palette as well, and make some tests to find the best result. And here is the final image (**Final.01**) – hope you like it, see you next month!


Fig.10

Note from the Editor

Rafael has kindly provided us with movie footage to support this tutorial on the creation of a beaten-up character in ZBrush. You can download the movies via the Free Movies icon, and enjoy this master at work!


Fig.11

Please note: There are 14 movies in total and so they may take some time to download, but we're sure they will help you to understand Rafael's working process in ZBrush. Enjoy!

Rafael Ghencev

For more from this artist visit:
http://www.rafestuff.blogspot.com/
Or contact:
rghencev@yahoo.com





Final.01

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ORC MAORI

MAKING OF BY NICOLAS COLLINGS

Fresh on the heals for his last “Making Of” (which was featured in the September 2008 issue), Nicolas Collings gives us yet another amazing insight into his creation process. This time it’s for his Orc Maori character, which he created using ZBrush.

“A FEW RULES TO KEEP IN MIND ARE TO FIRST OF ALL START BY BLOCKING IN THE BASIC MASSES AND FORMS OF THE MODEL, AND SECONDLY, IF YOU WANT TO AVOID ANY “BLOBBY” EFFECTS, I RECOMMEND YOU ALWAYS SET YOUR BRUSH TO A LOW INTENSITY.”

© Nicolas Collings

MAKING OF ORC MAORI

Created In:

ZBrush and 3ds Max

Introduction

Hello everyone, my name is Nicolas Collings and in this article I'm going my latest artwork, Orc Maori, and the techniques I used to quickly get an illustrative look from my 3D sculpt.

Inspiration for this piece came after watching one of the Gnomon Workshop DVDs by Aaron Sims, *Creature Design with Aaron Sims*.

During the process I only used ZBrush, and then Photoshop was used for the final compositing. No external render engine was used – just ZBrush. So let's get started!

Reference

I started by doing a couple of sketches. Preliminary sketches help me to develop the initial look of the character; to define the different features the model might have, what kind of pose or expression I want, and how I'm going to equip him, etc. I like to know more or less where I'm going before starting any 3D work, even if at the end I often come up with a slightly different result (**Fig.01**).



Fig.01


Fig.02

Modelling

I'm not going to extend myself too much on this aspect of the article because I've already written a making of (Wolverine Tribute) for 3DCreative which went into more depth in the modelling section, and there are also "Making Of" articles available on my website, too.

So basically, modelling is one of the most enjoyable steps for me. Depending on the model, I start either from a base cage created in 3ds Max or from a ZSphere directly in ZBrush. Once your base cage is done you can start sculpting your character inside ZBrush or Mudbox – that's where all the fun and magic happens!

A few rules to keep in mind are to first of all start by blocking in the basic masses and forms of the model, and secondly, if you want to avoid any "blobby" effects, I recommend you always set your brush to a low intensity. Be sure to choose an appropriate brush size according to the scale of the details you want to add, and most importantly, be sure to go as far as possible in the current level before subdividing the geometry even further. Please also do not be afraid to smooth out details and then refine the area.

Once my sculpting was done, I started trying out a few poses with the powerful tool called Transpose (find more information about the tool on ZBrush: http://www.zbrush.info/). After I'd decided on the pose I was going for, I kept sculpting a bit more, working with the pose, the muscle tension and tendons, cloth folds and so on – whatever required further work (**Fig.02**).


Fig.03

Texturing

Since the goal was to create an illustration, I didn't need to really texture my model as if it was intended to end up in a cinematic game or movie. I simply wanted to create a concept and quickly visualise the model as a final product.

So to do this, I just used the automatic AUV tile inside ZBrush. Like I said, there was no need to bother with clean UVs and unwrapping because I wasn't intending on painting on the flat UV template, but on the actual 3D sculpt instead, using polypaint (you can find out more information about the tool on ZBrush: http://www.zbrush.info/).

Since I planned the look of the character in my initial sketches, I already knew what I had to do at this stage. I had to split my basic texture into two layers; the first one was obviously for the tattoo, and the second was for the skin tone colour. For the tattoo, I extensively used the Lazy tool, which helps you to control your brush strokes more precisely. For the skin, I used a painting technique explained by Scott Spencer, which basically consists of painting the skin colour in layers. Depending on the area, you paint in blue, red or yellow, and then finally cover everything with a thin tonal layer of brown/orange. This is a really effective technique, I must say!

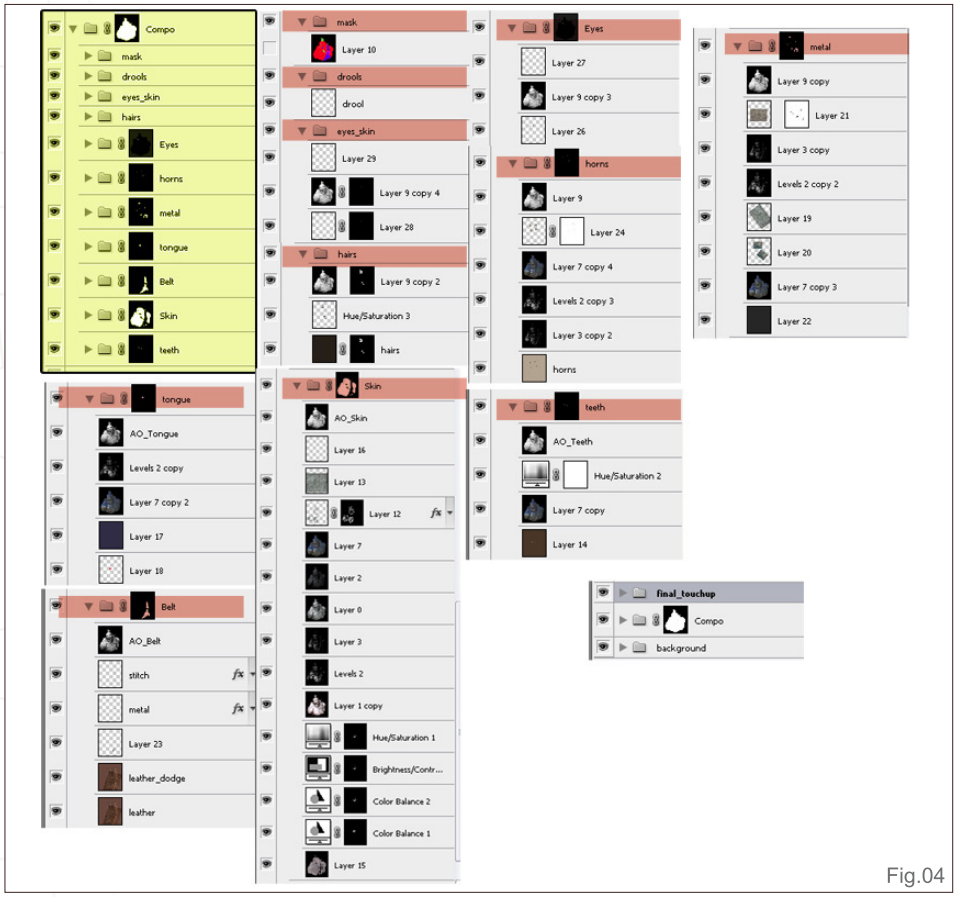


Fig.04

Render Passes

Once my two maps were ready, I thought about the different passes I would need. I came up with these main passes: an Occlusion, Specular, Reflection, ZDepth and Mask pass (**Fig.03**). These passes were achieved simply by assigning a specific MatCap to the model which mimicked the desired effect. I saved each render separately by exporting the doc.

For information, there is a great MatCap repository thread on ZBrush Central, but you can, of course, create your own MatCap. If you're interested in this, simply take a look on ZBrush Central – just look at the ZBrush Info page, there's a great tutorial there that clearly explains the process of how to create your own MatCap.

The ZDepth pass is really easy to get: go to the alpha palette, click on grab doc, and then save the document. For the Mask pass, I assigned a colour to each SubTool and then selected the flat material. This render was useful to be able to later select the different object easily.

With all the texturing covered, let's now go on to discuss the compositing work, which was all done in Photoshop.



Compositing

During this phase, a lot of experimentation was necessary. There were few common things though, such as the specular and occlusion render, which were going to be set respectively to Screen and Multiply modes. As for the other passes, they were, most of the time, set to Overlay or Soft Light modes. Keep in mind however that experimentation with the other modes is the best way to achieve an interesting look.

See **Fig.04** to see how I managed my layers for this project. Once all of my basic passes were composited, I began adding some photos of leather, metal and dirt on top of it. Again, test the different blending modes to suit your personal aims and objectives.

The purpose of this step was to apply texture information and to add a touch of realism to the image. I also hand-painted some elements like the drool going on inside his mouth, as well as some highlights and shadows here and there. Finally, I used a filter, such as the Lighting Effect one, and a photo filter to give the overall image a uniform feel. Radial Blur was also used to add some movement and depth to the image. And here is the final result (**Fig.05**).

Nicolas Collings

For more from this artist visit:
http://www.nicolascollings.com
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Fig.05

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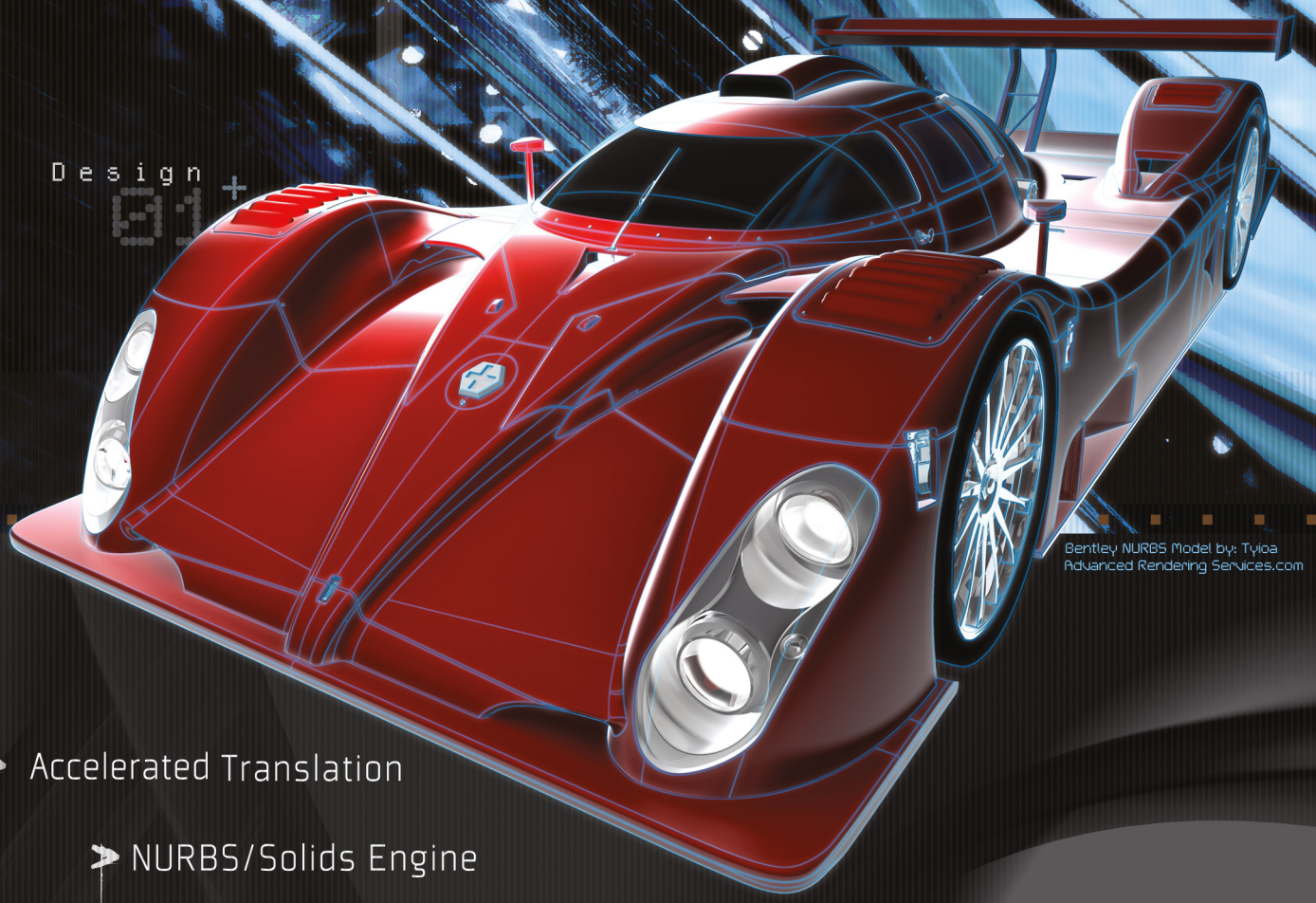
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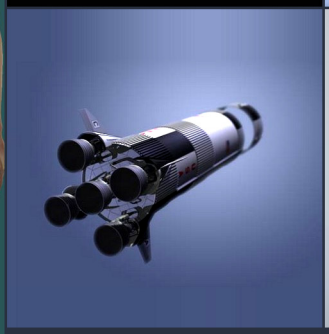
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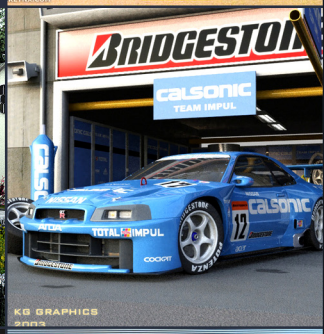



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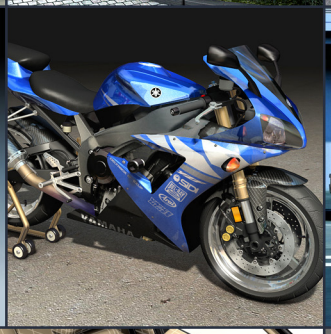
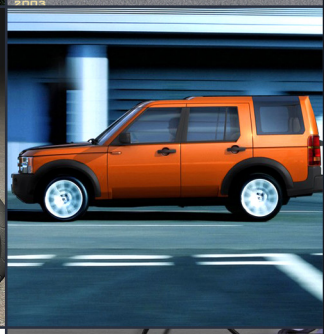
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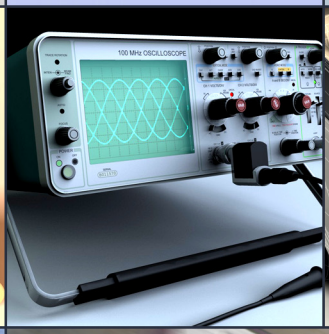




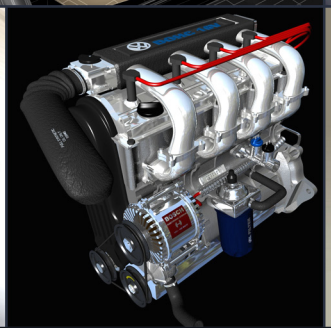












Making of by Felipe Lobo

Living Room

Read on to find out how Felipe Lobo used 3ds Max and VRay to create his image: "Living Room"

"You can control the opening of the diaphragm, the type of ISO of the film, the length of exposure, the lens distortion, along with many other parameters. So for those who are already accustomed to dealing with photography, you should find that you pick up using the VRay camera pretty quickly and easily"

© Felipe Lobo

MAKING OF LIVING ROOM


Fig.01

CREATED IN:

3DS Max, VRay

INTRODUCTION

Hello everyone, my name is Felipe Lobo, I'm from Rio de Janeiro in Brazil, and I would like to thank the 3DCreative team for giving me this opportunity – and pleasure – to talk about the creation process behind my work in this article.

My main goal with this image was to study three types of lighting – artificial light, sunlight and moonlight – and to explore the use of VRay physical cameras and see how they interact. To make the study even more interesting, I imposed the condition that I could only use one lamp in each case. The rest of the lighting had to be obtained through Global Illumination.

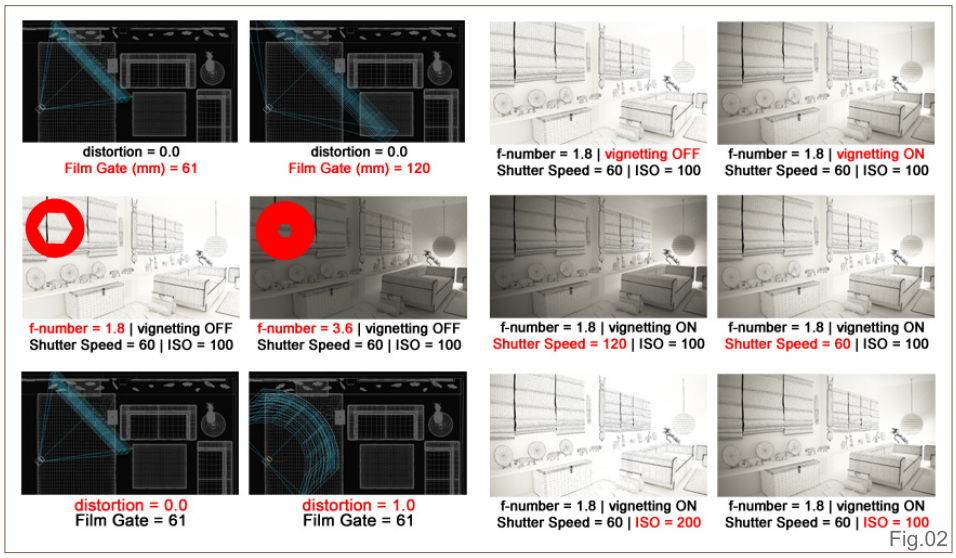


Fig.02


Fig.03

REFERENCES

Before starting any project I like to do some research into what I am trying to create and the effect I want to achieve. In this case, as I was intending to study the lighting, I made a collection of images with various effects that I wanted to create and that I could use as reference. I was basically looking for clues in the reference images as to how to operate the shadows, subsurface, reflections, where the light was stronger or weaker, and so on.

MODELLING

My focus for this study was not on the modelling, so I decided to get some models ready and place them as I wanted. I tried to create a simple environment (**Fig.01**) that could be used for my three types of lighting under study: artificial light, sunlight and moonlight.

There are several excellent web sites that sell great models – some of which also have free ones available – such as Evermotion.org, 3DTotal.com and many others. Some have even been textured and are ready for use in a scene.

PHYSICAL CAMERA

The VRay physical camera is much better than the 3D Studio Max camera; it has all the controls

of a real camera. You can control the opening of the diaphragm, the type of ISO of the film, the length of exposure, the lens distortion, along with many other parameters. So those who are already accustomed to dealing with photography should find that they pick up using the VRay camera pretty quickly and easily, but for those who do not have such practice, here are the main parameters (**Fig.02**).

1. Film gate (Lens Aperture)
2. F-number (Diaphragm Aperture)
3. Distortion (Lens Distortion)
4. Vignetting (Reduction of an image's brightness or saturation at the periphery)
5. Shutter speed (Exposition Time)
6. Film speed (ISO - photographic film's sensitivity to light).

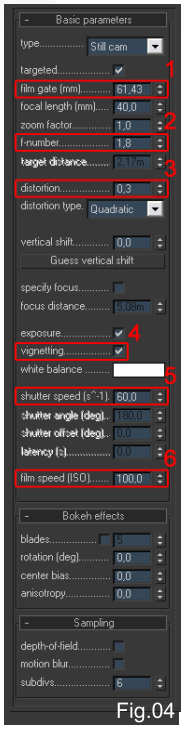


Fig.04

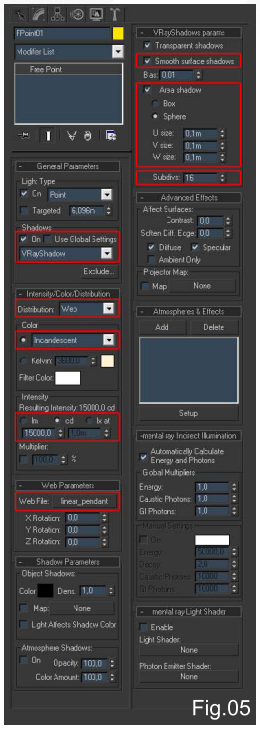


Fig.05

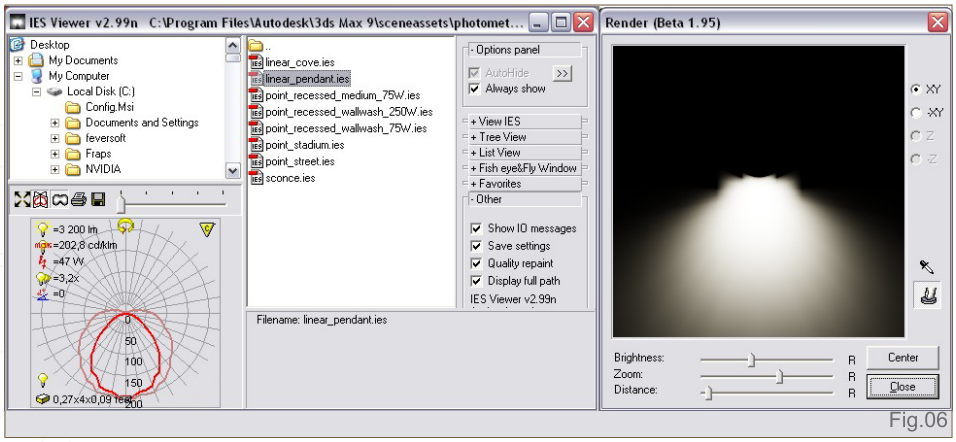
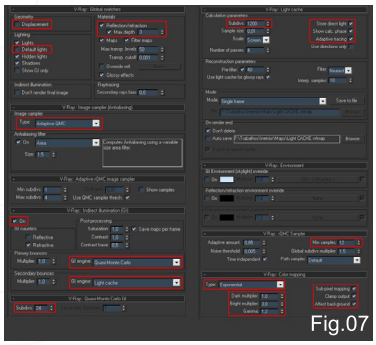


Fig.06


Fig.07

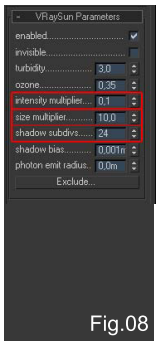
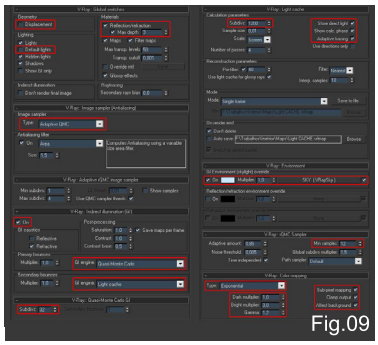


Fig.08


Fig.09

Here is the image captured with the final configuration of the camera (**Fig.03** & **Fig.04**).

LIGHTING & RENDERING

After configuring the camera, I moved onto the configuration of the light. The camera will be the same for all lighting setups.

ARTIFICIAL LIGHTING

For the artificial light scene, I used a Photometric Free Point Light with VrayShadow and a Web distribution (**Fig.05**). This light, with this distribution, lets you use the IES file-type. IES is a file that basically gives the distribution of light (intensity) in ASCII format. You can think of it as a digital profile of a light in the real world. These files are created by many of the leading manufacturers of lighting and can be downloaded for free from their site. One of these manufacturers is Lithonia Lighting (http://www.lithonia.com), which has an extensive library of IES files in different categories.

To select certain files for each case, I used the IES Viewer (**Fig.06**). This enables you to view the distribution of light in real time, and it can also be downloaded for free. The settings of the render are shown in **Fig.07**.



Fig.10

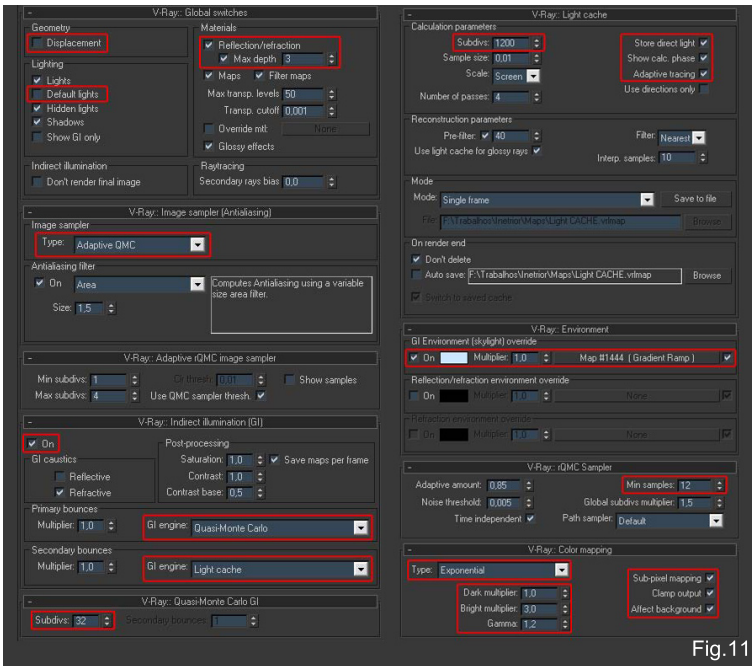


Fig.11

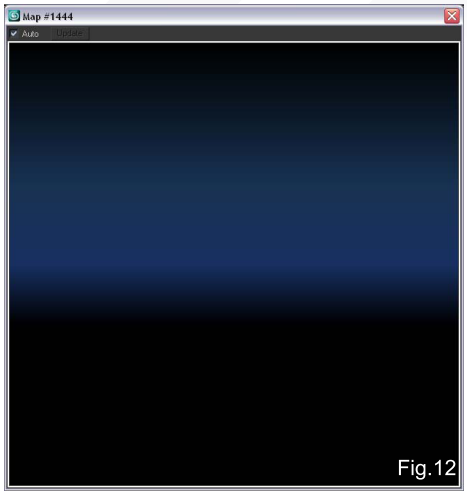


Fig.12

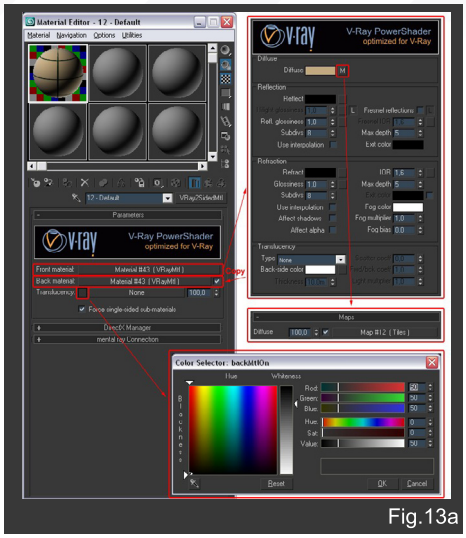


Fig.13a

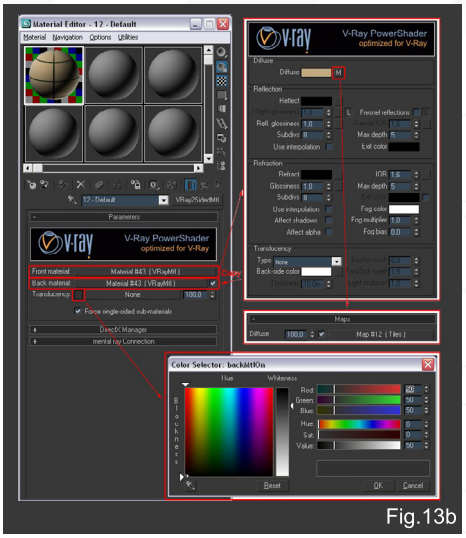


Fig.13b

SUNLIGHT

For the sunlight, I used a VraySun with the following configurations of light (**Fig.08**). The render settings are shown in **Fig.09**.

In the rendering window (**Fig.09**), the only changes that I made, with regards to the previous artificial light render, were:

- I increased the Quasi-Monte Carlo GI subdivisions to 32 (this reduces the noise generated by indirect light)
- I turned on the GI Environment and placed VraySky as the map


Fig.14

MOONLIGHT

For the moonlight setup I used a Target Directional Light with the settings in **Fig.10**. For the render settings, the only changes I made, with regards to the previous sunlight render, were (**Fig.11 & Fig.12**):

- I changed the map of the GI Environment
- I applied a Gradient Ramp


Fig.15

MATERIALS

The materials already came with most objects and were nothing special. The only one that required a little more work, and which creates more curiosity, was the material for the blinds and the lampshade. Because they are translucent, they allow some light to pass through them, so I needed to use an object without thickness and with a Vray2SidedMtl material (**Fig.13a** & **Fig.13b**).


Fig.16


Fig.17

Renders Before Post-Production

Here are the final results without post-production, so the direct results from rendering (**Fig.14 – Fig.16**).


Fig.18

Post-Production

During the post-production stage I added some small details that were quick to be placed and modified, such as the background of the city in the window, the volume light of the sun and the moon, the glares and so on. And here are the final results after post-production (**Fig.17 – Fig.19**).


Fig.19

Conclusion

With good settings for my camera and materials, I just had to worry about getting the desired lighting, because both the camera and material, once set up, needed not to be tampered with again.

Thanks for reading!

Felipe Lobo

For more from this artist visit: http://www.imagesociety.com.br

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3DC

Here is what's in next months issue of 3dcreative

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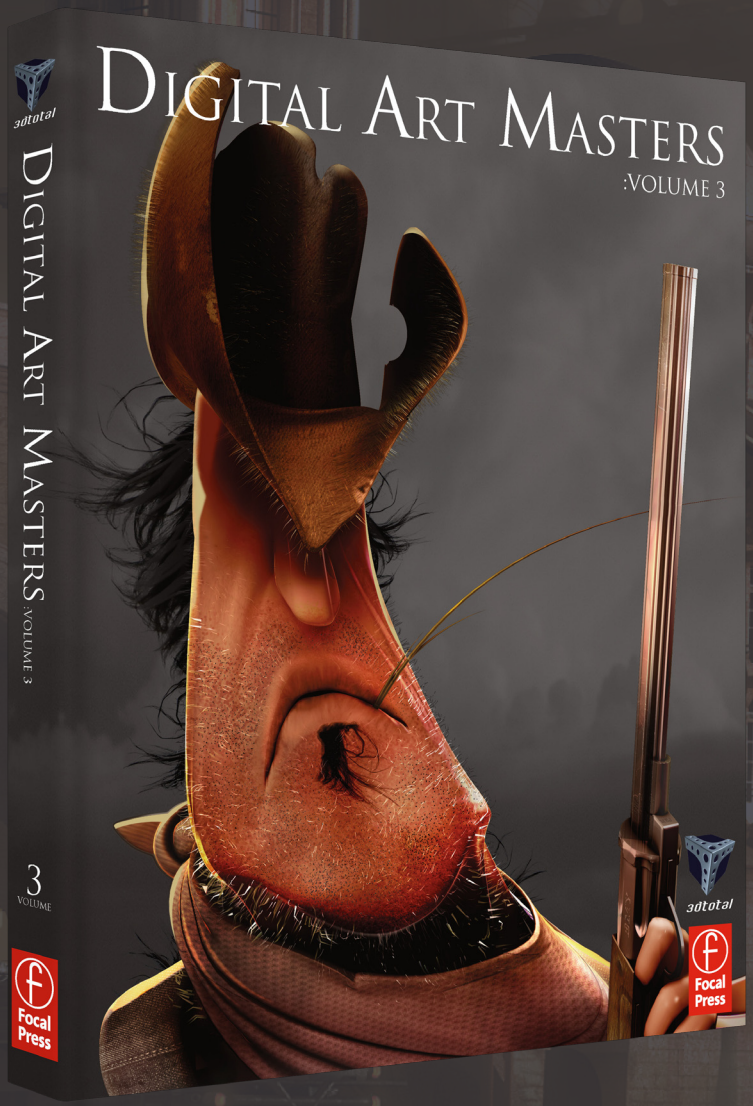
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With the release of 3DTotal's latest book, *Digital Art Masters: Volume 3*, we have some exclusive chapters for you...

This book is more than just an artwork book. Not only does it feature full-colour, full-page images, but each artist has given a detailed description, in their own words, of the creation process behind each piece of published artwork. And they've done it especially for this book!

This month we feature:

"Rail Haven"

by Marco Edel Rolandi





Rail Haven

By Marco Edel Rolandi



Introduction

I usually try to create whole sceneries and stories, rather than single stand-alone images, and this shot is no exception, being not only a frame of an animation (**Fig.01**), but also just a view of a more complete work. My approach obviously carries both advantages and issues: you'll recycle a lot of material from one scene to the other (helping you out in assembling your "frozen" image), but you'll have very different objects with various degrees of resolution ending up in the same scene, usually leaving you with scarce detail on the foreground and possibly exceeding detail in the background as well (**Fig.02**). Not being an illustrator, I was also worried by the quality of my final product and of being unable to communicate with a single image what I actually had in mind.

I used both my own concept art (**Fig.03**) and pictures to create the scene, while the idea behind it – in which every aspect of the society, including architecture, was influenced by and recalls mechanical parts (**Fig.04**) – was highly inspired by movies like Fritz Lang's *Metropolis*, where the ideals of the futuristic movement degenerated in a world in which man was nothing but a single, small piece of giant majestic machines.

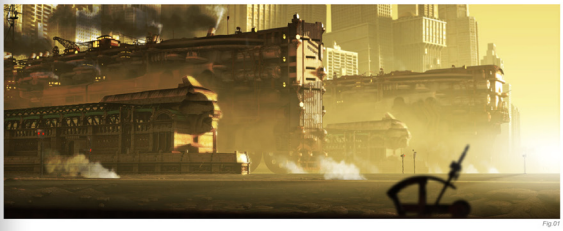


Fig.01

The following shots of the "Rail Haven" book pages are featured here in full-resolution and can be read by zooming in...

Giant Locomotives

Important elements of the scene were the Daridras (**Fig.05**) – a cross between Japanese WW2 aircraft carriers and giant steam locomotives 290m long and 125m high, conceived as asymmetrical vehicles being able to fire only on one side, and stand defensive on the other. Opposite to any good principle for modeling, instead of building an overall shape and then start detailing when needed, the Daridras grew from the basic relationship between human scale and the overall proportion of the main carriage and then modeled outwards. This is why the steam engine and the main wheels were already modeled and textured, even before an overall shape of the "ship" was even conceived (**Fig.07**).

At this stage I enjoyed translating the normal scale mechanism into a giant scaled counterpart, where even simple objects like connecting rods had to be modeled as planar trusses with a full set of hand rails, huts and revolving stairs in order to remain close to the original concept of having people running back and forth like ants (**Fig.06**).

I later began experimenting (**Fig.08**), adding armor, two main turrets and a horizontal version of the bridge, inspired by *Tron* (1982). As I began to refine the shape even more (**Fig.09**), I quickly realized the need to simplify things due to technical reasons.



Fig.02

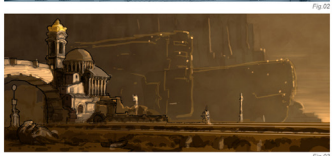


Fig.03



Fig.04



Fig.05

I therefore opted to ignore the "least interesting side" of the machine by modeling only the offensive half for stills, and by moving the camera and the background, instead of the whole 7000-part object, for animation (both techniques are used in a lot of movies!). The huge amount of parts required me to have a clear planning of the texture channels at a very early stage as well; those same channels needed to control the overall color scheme. I eventually animated all the wheels and rods and outlined the final shape of the object (**Fig.10**) by adding a more vertical tower bridge. I also finally defined all the texture channels, using a planar UVW map scaled to cover the whole 3D model for the color scheme, and several smaller cubic channels for bitmap materials. The moving parts required separate channels and the use of



Fig.06

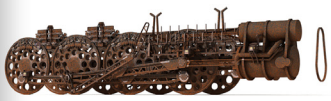


Fig.07

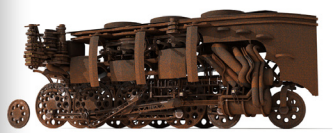


Fig.08

handmade dust maps, in order to take into consideration the friction of moving parts when dealing with weathering. I finally began to add finer detail (**Fig.11**) by taking pieces from other 3D objects I've made (houses, airplanes, cars, etc.) and using them as "fillings". I also quickly modeled some ship parts, using old Tamiya kits as reference, as I needed to keep the ship idea but I didn't have any previous 3D model I could scavenge. Once finished, I started painting the large masks (**Fig.12**) and completed the texturing. The last thing I added to the model was indeed one of the most important: the bow. I've always wanted to give some "personality" to the machine, and the new bow reflects this, being partially inspired by African masks, as well as large herbivores.

The Metal Shader

The process of creating the metal shader wasn't linear at all, as the same material had to be used in different scenes with different lighting conditions, and required seven or eight revisions. The shader was almost completely procedural and was composed of three standard materials blended together in four steps. The

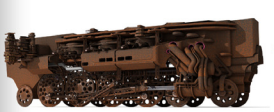


Fig.09

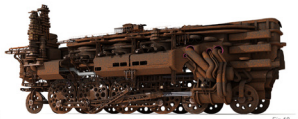


Fig.10

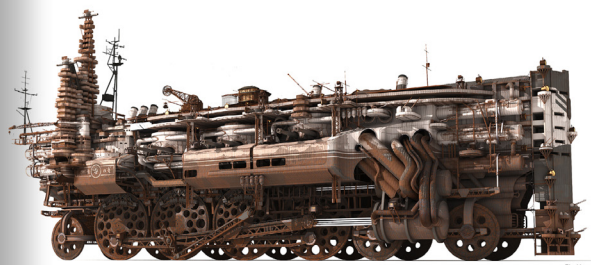


Fig.11

base layer (**Fig.13**, on the left) contained the first gray material (procedural) and a simple bitmap rust material, mixed using a fractal noise map with a coarse finish and a gradient ramp; the latter was used to simulate the rust depositing on the lower part of the objects, and to gain direct control over the appearance. The second layer (**Fig.13**, center) added a shiny metal using an inverted dirt map to simulate weathering and to give a better volumetric consistency of the shape as well. The final result (**Fig.13**, on the right) overlays the same rust material with a new dust mask to give a more coherent appearance. In the end, the same material was used in the scene with very different results, and constituted a good procedural base for more complex texturing, where handmade masking was necessary (**Fig.14**).

Composition

When compositing all the single elements together (**Fig.15**), I tried to create a "flow" of darkness guiding the observer's eye back and forth diagonally along the image, and setting the center of the image towards the upper left part. I eventually came up with some composition lines (**Fig.16**) subdividing areas of light and dark, of foreground and background. In order to maintain an interesting rhythm, I subdivided the horizontal space by placing vertical frames, aligning the position of every object along vertical lines and circles, and placing key objects on the intersection of the vertical lines and the horizontal. Of course, the process was characterized more by trial and error than it actually sounds!



Fig.12



Fig.14



Fig.13

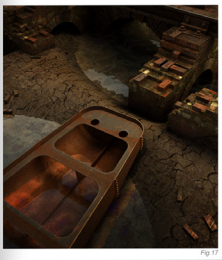


Fig.17

Conclusion

As with all of my work, I would say that I'm not completely satisfied with the results. There's plenty of room for improvement in almost every aspect, especially on the left foreground, where detail is lacking (**Fig.17**), and the overall composition is still a bit unresolved; at the same time I believe I've reached a balanced point where the concept has been adequately transmitted to the viewer. I've learned a lot creating this shot and I consider it to be a good starting point for hopefully better work!

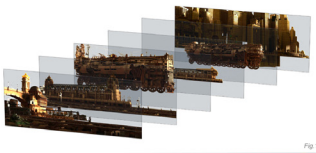


Fig.15

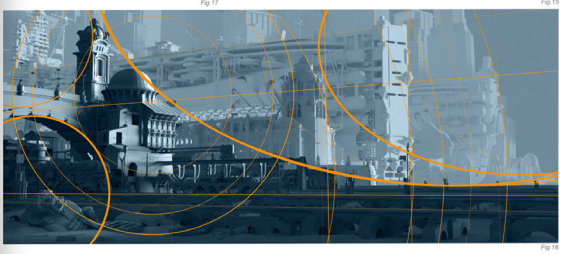


Fig.16

Artist Portfolio







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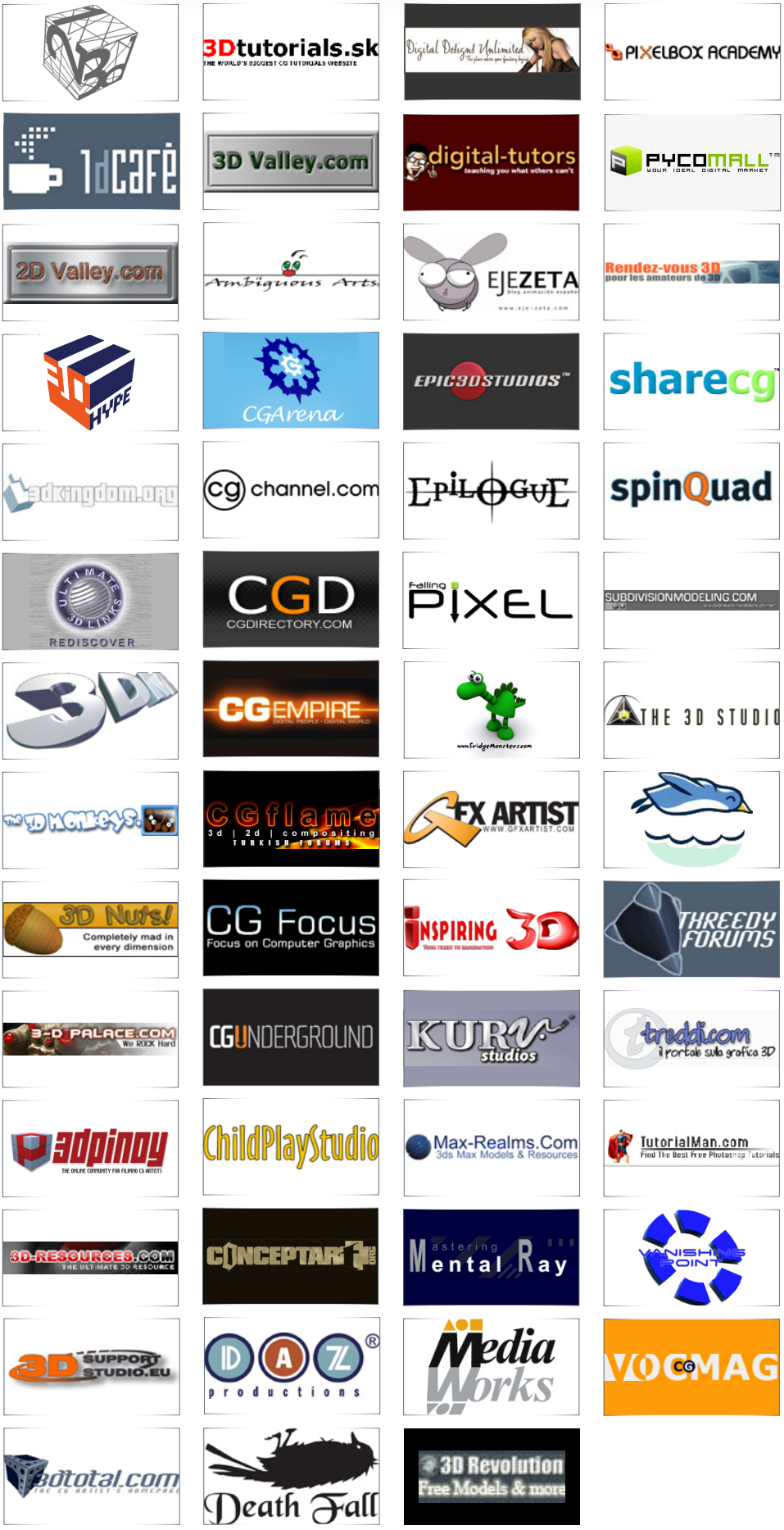
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Introduction:

The original character of the Swordmaster was created by Seong-wha Jeong and we had 3DTotal's in-house 3d artist Richard Tilbury, re-create the character in 3dsmax as well as create the textures in Photoshop, in our new precise, step-by-step tutorial for highly polished, low polygon game character with detailed texturing for real-time rendering. We have also converted the tutorials into Cinema 4D, Maya, Lightwave and Softimage platforms. Even if you are not a user of one of them, the principles should be easily followed in nearly all other 3D applications.

The Swordmaster tutorials is spread over 8 Chapters which outline, in detail, the process for creating the Swordmaster below are the details.





Chapter 1: Modelling the Head
Chapter 2: Modelling the Torso
Chapter 3: Modelling the Arms & Legs
Chapter 4: Modelling the Clothing & Hair
Chapter 5: Modelling the Armour
Chapter 6: Mapping & Unwrapping
Chapter 7: Texturing the Skin & Body
Chapter 8: Texturing the Armour & Clothing

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AGED & WEATHERED ENVIRONMENT
CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER
PART 6: LIGHTING & RENDERING

RENDERING AND LIGHTING SET UP

Before we start adding lights into our scene we first need to set up the renderer. Click on the Render Setup tab along the main toolbar (highlighted in yellow in **Fig.01**) and open the Common tab. Scroll down to the Assign Renderer tab and change the Default Scanline Renderer to mental ray Renderer. Now open the Indirect Illumination tab and tick the box next to enable Final Gather in the top left of the rollout (**Fig.02**). We are now ready to start adding lights.

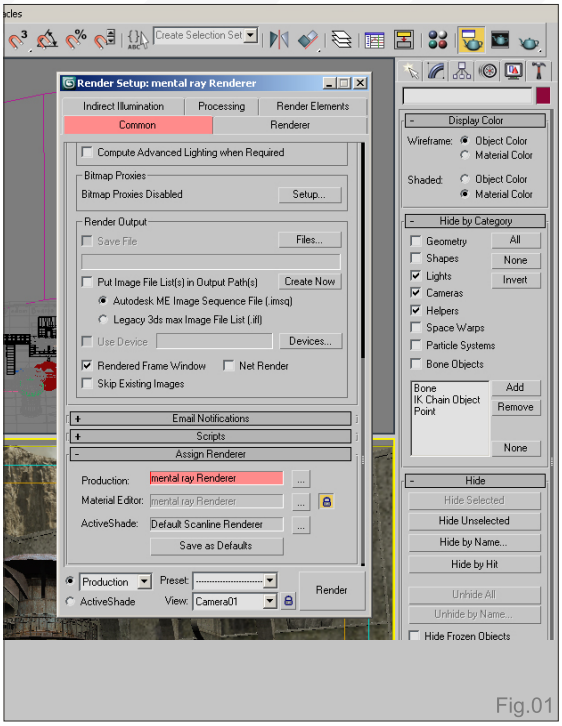


Fig.01

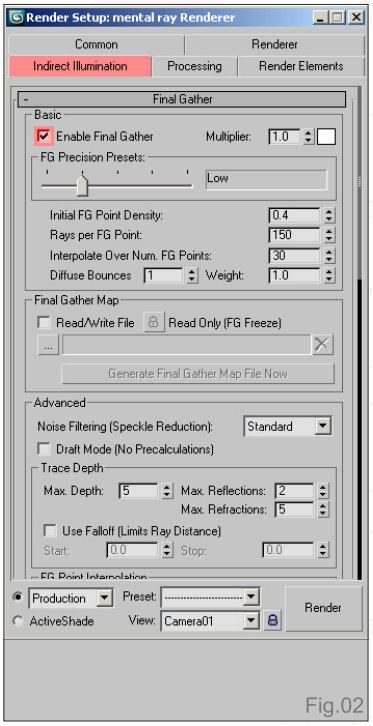


Fig.02

The principal light which will represent our sun and be named accordingly is a Target Directional light placed above and to the right of our scene (**Fig.03**). You can see the parameters for this on the right panel. I have enabled Ray Traced shadows as well as altering the Hotspot and Falloff to the settings shown. You may also notice that I have tinted the colour (R255 G248 B226) slightly towards yellow to help match the concept painting and sky texture which is mapped to a simple curved plane behind the scene together with the mountain. When this is rendered out it looks like **Fig.04**. I decided

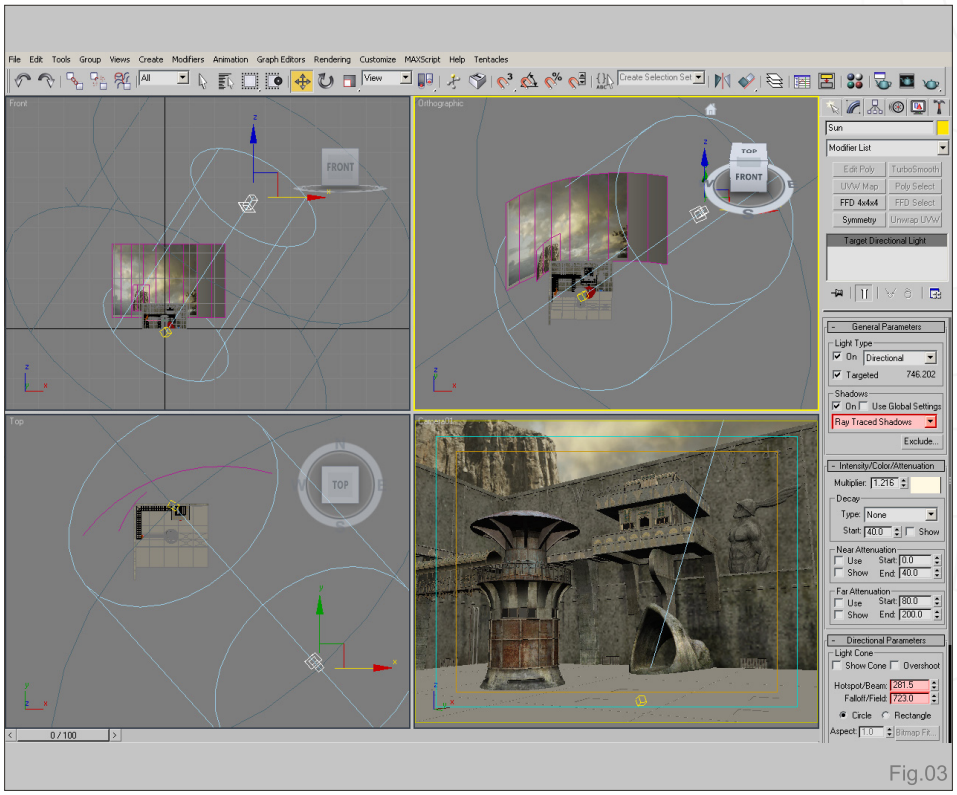


Fig.03


Fig.04

that I didn't want really dark shadows and so under the shadow Parameters tab, changed the Density to 0.7 - but you this is entirely subjective (**Fig.05**).

This is a good start for the general lighting conditions but we need to add a further light to show a highlight on the wall suggesting where the sun has broken through the clouds momentarily. In **Fig.06** you can see the settings used for this light. It has a higher intensity (Multiplier 1.5) than our main light and a smaller hotspot and falloff to focus the light on the wall. Once rendered you can compare the difference between our previous version and this one (**Fig.07**).

RENDER PASSES

This concludes the lighting setup, but in order to arrive at a final render we will need to create a couple of passes that can be composited in Photoshop. To create some extra volume and enhance the areas in shadow we will add an Ambient Occlusion pass to our list of renders. First of all hide the background as this is irrelevant, select all of the geometry and apply a new material. Click on the Standard material and select the mental ray material from the list (**Fig.08**). Under Basic Shaders, select the Surface map button and select Ambient/Occlusion (**Fig.09**). Keep the settings as they are for now and do a render and you should end up with something similar to **Fig.10**.

Increase the samples to a minimum of 256 for the final render, but keep the value low whilst doing tests. You may wish to experiment with the Max distance settings as this affects the shadow radius – smaller values make the image look more bleached but reduce render times, but best to leave the value at zero initially. To also help improve the quality, increase the antialiasing and final gather precision from within the renderer. One other pass that will help our final image is a specular pass which is setup through the renderer. Open the Render Elements tab, click on Add and select specular from the list. This will simply render out the specular aspects in the scene on a black background (**Fig.11**).

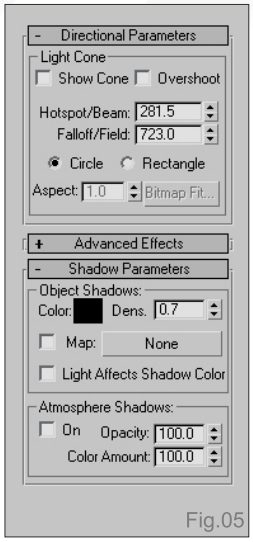


Fig.05

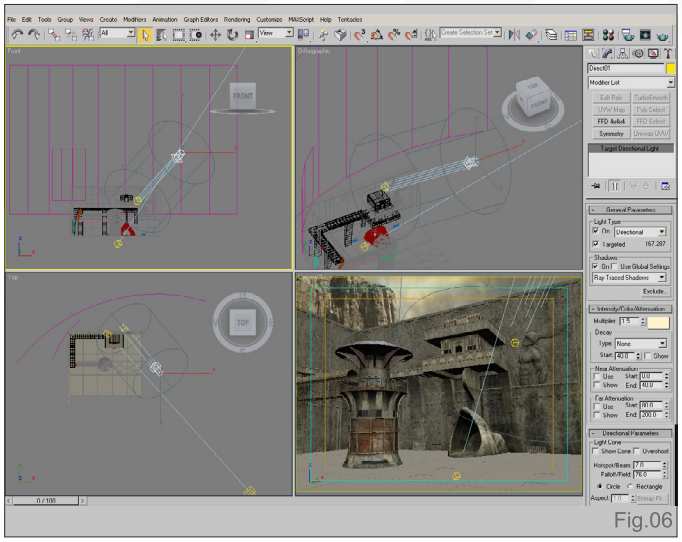

Fig.06


Fig.07

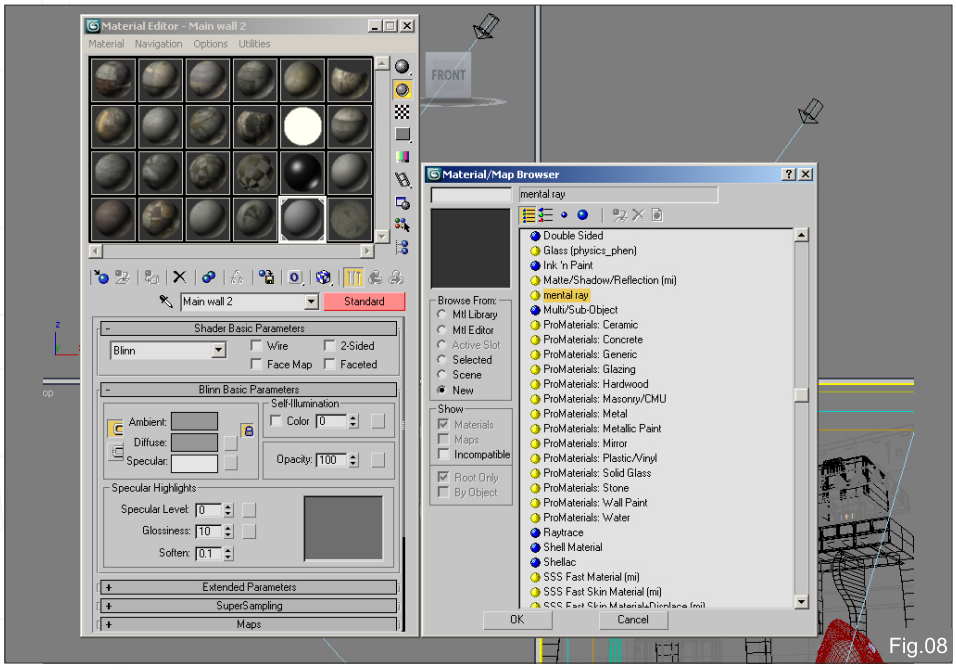


Fig.08

FINAL COMPOSITE

We now have all our renders and are ready to composite them in Photoshop. Open the scene render and then add the specular map as a new layer on top of this and set it to Screen at 60% opacity (**Fig.12**).

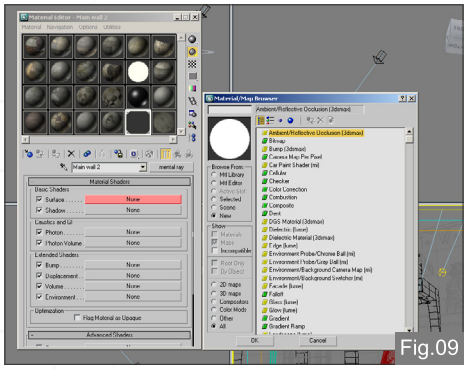
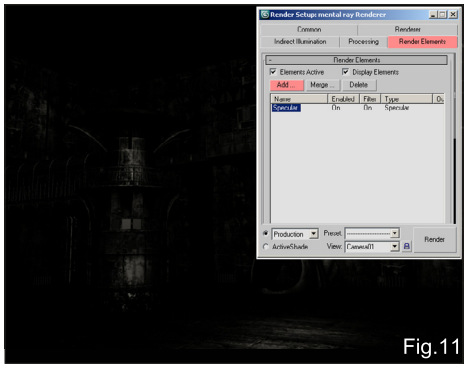
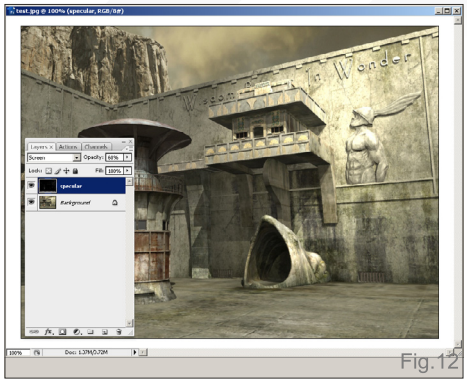
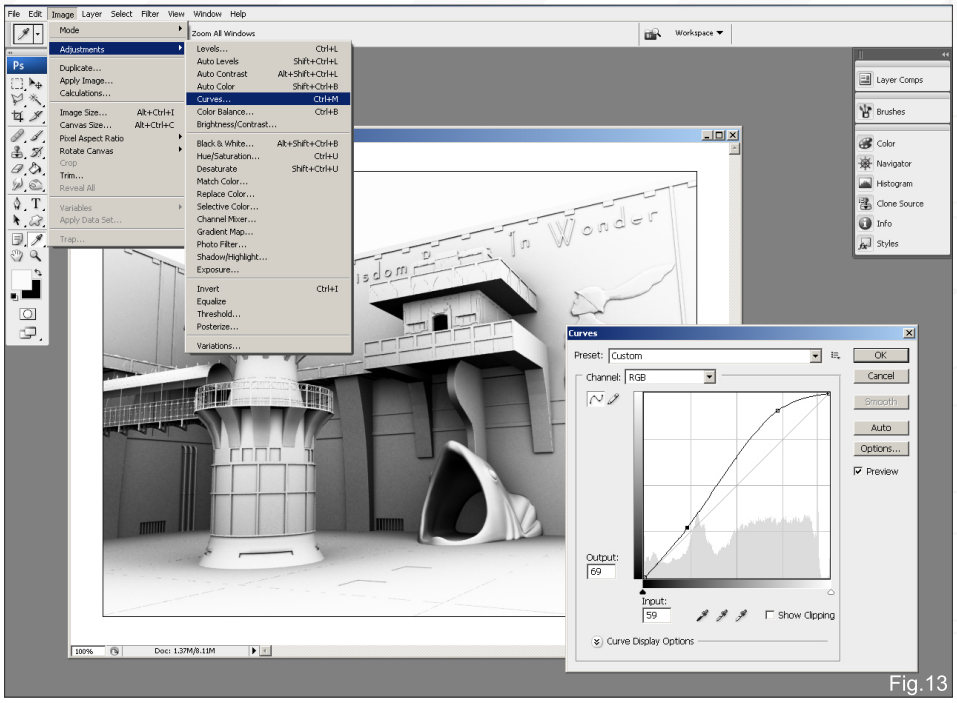

Fig.09

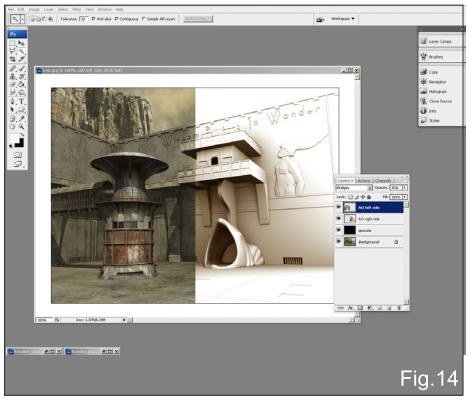

Fig.10

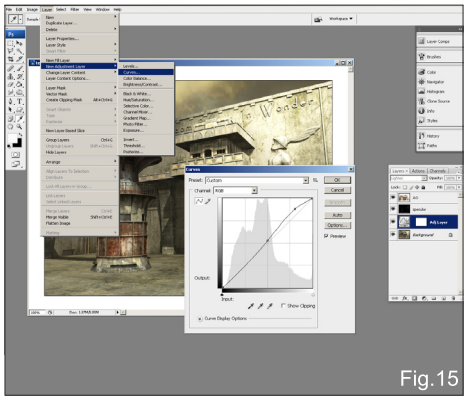

Fig.11


Fig.12

Open the AO pass and using Image-Adjustments –Curves, increase the contrast and lighten the brightest areas (**Fig.13**). Now add this above the specular layer and set it to Multiply at around 35% opacity. Go to Image-Adjustments-Colour Balance and change the grey tones to a warmer hue similar to **Fig.14**. You can see here that I have duplicated the


Fig.13


Fig.14


Fig.15

layer to show how it looks before the blending mode and opacity have been altered (right side).

In order to make the scene just look that little bit more dramatic, I added a Curves Adjustment Layer to create a more intense light, as well as substituting the mountain (**Fig.15**).

The final render can be seen here.



AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 6: LIGHTING & RENDERING

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CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 6: LIGHTING & RENDERING

In this instalment of tutorial we will talk about lighting set up, rendering parameters, GI settings, render passes and post production. First of all, look at the scene. It represents an outdoor environment and therefore then the sun will be our light source. So we should start by deciding where to put our light source, so let's take a look at our aquarium scene. Assuming that the focal point of the scene is the tower, place the light "Infinite" as seen in **Fig.01**.

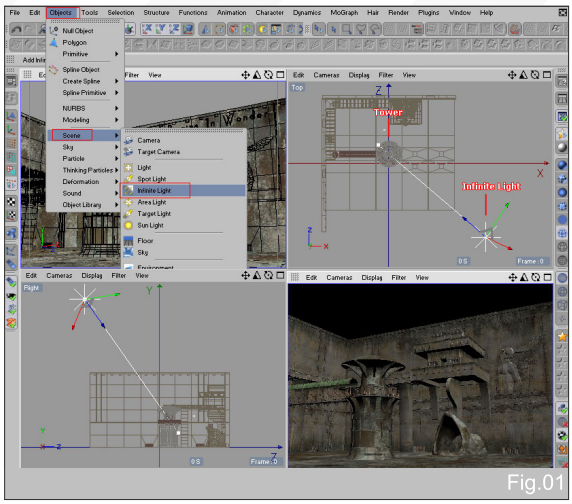
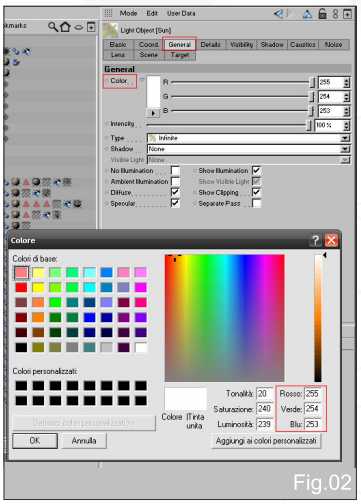
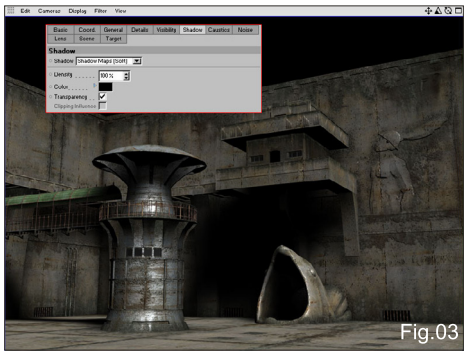
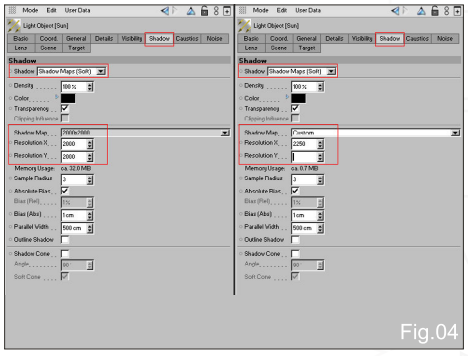
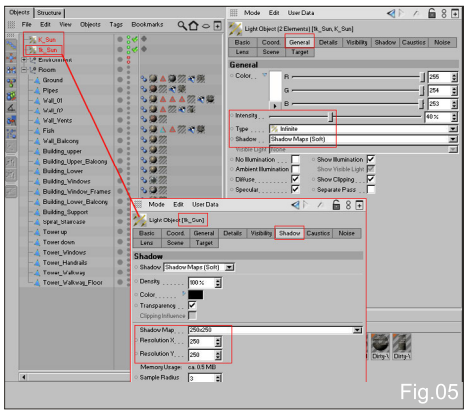


Fig.01


Fig.02


Fig.03


Fig.04


Fig.05

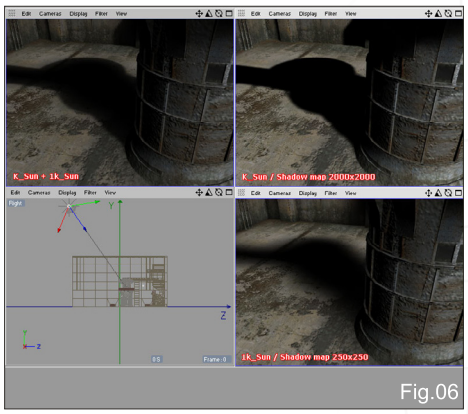
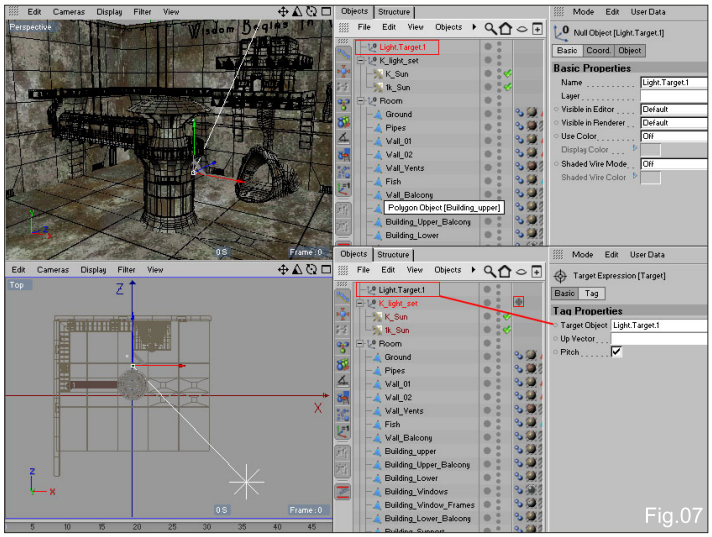


Fig.06

As you can see from the image, in Cinema 4D there are several light objects, divided as follows: Omni Light; Spot Light; Infinite Light; Area Light and Sun Light. We chose Infinite Light because it is cast from an infinite distance - the light has no actual origin. Distant light sources such as this are suitable for simulating sunlight. Since the distant light is infinite, its position has no effect on the scene's objects, however, the direction in which the light is facing is important. Go to the Attribute Manager settings by selecting the Infinite Light object from the object manager. Here you can modify the type, the colour, the brightness, the shadow and other parameters. The attributes of the light object are divided into the following categories:


Fig.07

Basic, Coordinates, General, Details, Visibility, Shadow, Caustics, Noise, Lens, Scene and Target. Go into the general control tab and change the colour of the Infinite Light as shown in **Fig.02**.

Now choose the type of shadow. As you can see, in reality all objects are lit by several partial light sources. The result of this is a gradual transition from light to shadow. You can simulate this soft edge in Cinema 4D by using a Shadow Map. It is a greyscale image of the scene as viewed from the light source. Set this type of shadow for our light source (**Fig.03).**

There are other two type of shadows. Raytraced (Hard) Shadow generates the kind of hard, sharp shadow borders that are rarely found in real world environments. Area Shadow is the shadow that is better for a realistic scene. We can say that the difference between the three types

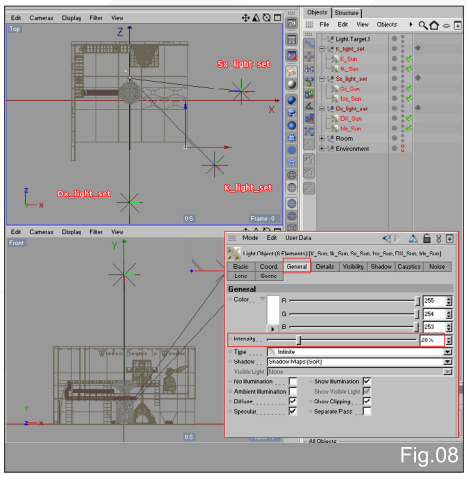


Fig.08

of shadows is the edge, or umbra: Raytraced Shadow generates a very sharp edge that always has the same width. The closer an object is to a surface on which it casts its shadows, the sharper this edge will be. Area Shadow simulates this effect, but it increases the render time. So we will see how to make a fake that simulates this effect by using only the shadow maps. Go back to the attributes of the Infinite Light object, then go in the shadow control tab and here increase the resolution of the shadow map, as shown in **Fig.04**.

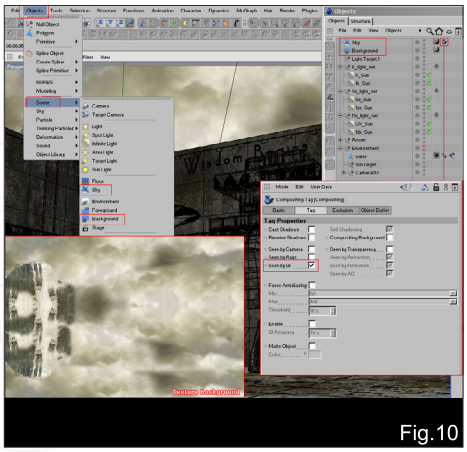

Fig.10


Fig.11

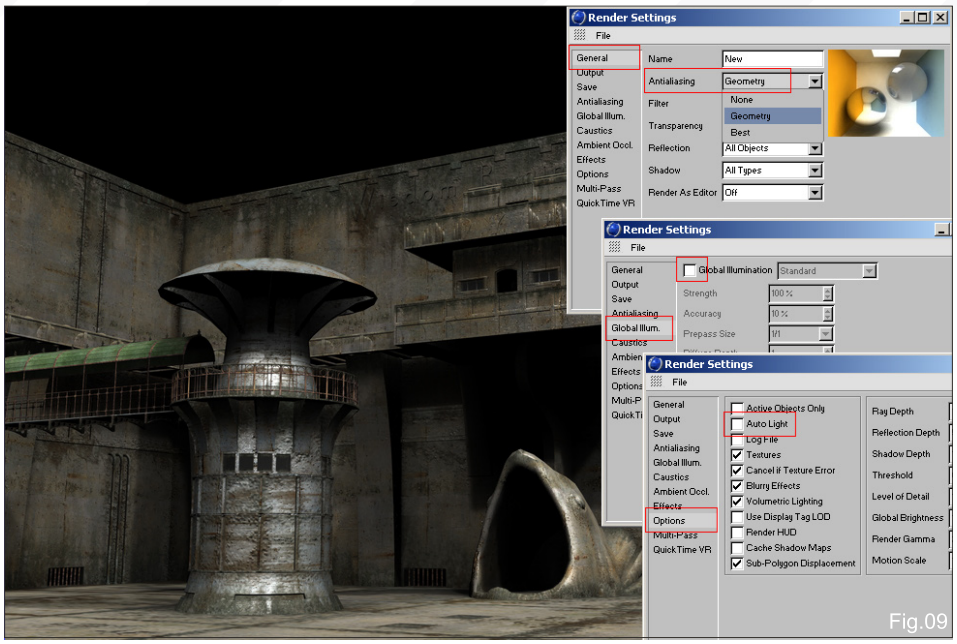


Fig.09

As you can see from **Fig.04**, you already have some default resolutions, but you can enter your own value if it exceeds the last resolution listed. In the shadow control tab, you can also modify the parameters such the density, colour, transparency, sample radius, etc. Now make a copy of the Infinite Light object and leave its position unchanged. I named the main light source “K_Sun”, while its copy “1k_Sun”. Since we have two lights, we can’t leave their brightness at 100%, so decrease the brightness of both lights (**Fig.05**).

Now change the resolution of shadow map of the 1k_Sun light object. We will use a resolution of 250x250. Let’s make a render just to see how the scene is coming out (**Fig.06**).

At the left of figure you can see a render of the scene. A render of the scene with only the K_Sun light object active is shown at the top right of figure, while a render with only the 1k_Sun light active is shown on the bottom right of figure. We may group these two lights into a “Null object”, it’s name will be “K_light_set”. Add a Target Light and position the target behind the tower object, as seen in **Fig.07**. Delete the light, because we just need the target, which we will then assign to our scene’s light. Add a target to the K_light_set object by selecting it from the right mouse menu (Cinema 4D Tags > Target).

Select the tag to go into its properties, add the name of the light target object into the Target Object box, as shown in **Fig.07**.

Now make a copy of the null object “K_light_set” and change its name to “Sx_light_set”. Place it to the left of the K_light_set object. Make another copy, rename it in “Dx_light_set” and position it to the right of the K_light_set object (**Fig.08).** Now select all of the light objects and decrease their intensity.

Before making a render of the scene, let’s check the render settings. So select Render > Render Settings from the main menu. A list of parameters will appear. Under the General control tab, choose “Geometry” mode as Antialiasing. Disable “Global Illumination” - we will see it in detail later. Disable the “Auto Light” parameter from the Options control tab, as shown in **Fig.09**. Now make a render of the scene.

Now I’m going to add a background object and a sky object to the scene. We will assign a material to these two objects; the material will use a texture like that shown in **Fig.10** and the colour channel will be the only enabled channel. Add a background object (Objects > Scene > Background). Assign the material “BK”. Select Texture and in its properties change the default

projection to “Frontal”. Add a sky object (Objects > Scene > Sky). Assign it the same material used for the background, change the default projection of the texture in “Spherical”. Add a Composit Tag to the sky object by selecting it from the right mouse menu. Select the tag and in its properties enable only the “Seen by GI” option (**Fig.10**).

In **Fig.11**, it shows a render of the scene.

As you can see, the lighting is not very realistic. For this reason we will use Global Illumination, which simulates the natural behaviour of light. So open the Render Settings window and let’s take a look at the Global Illumination parameters (**Fig.12**).

There are two types of GI: Standard and Stochastic. This last one is suitable for

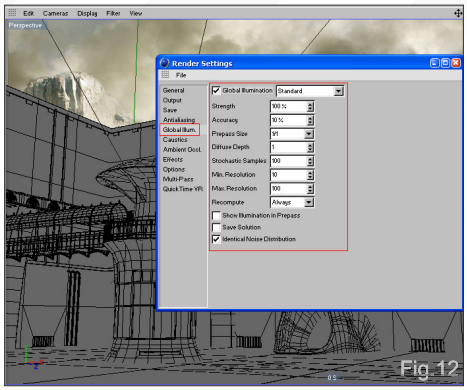
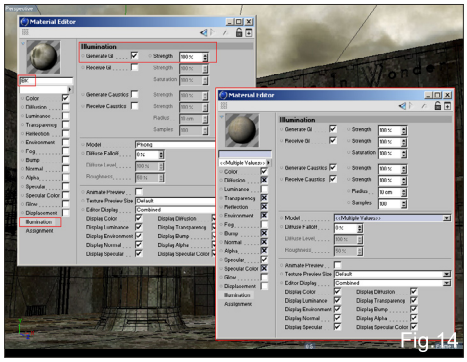
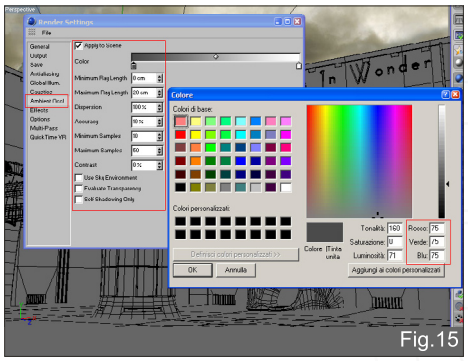

Fig.12


Fig.13


Fig.14


Fig.15

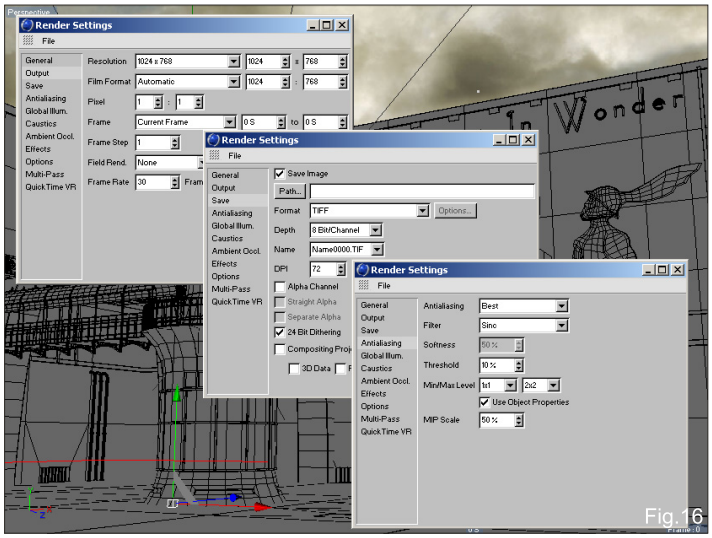

Fig.16


Fig.17

animation, so we will use Standard. The strength parameter controls the strength of the GI effect. Accuracy controls the general quality of the GI. Prepass Size defines the ratio of the prepass image size in relation to the final render size. The prepass image is rendered first and it shows the shading points as dots. Always use 1/1 for final rendering. Lower setting reduces render time, but also lowers the quality of the render. Diffuse Depth is the maximum number of reflections for each ray of light. The default value (3) is suitable for most scenes. Stochastic Samples defines the number of the rays that come out in a dome shape from a ray that hits a surface. Min Resolution and Max Resolution optimise the accuracy setting. Min Resolution sets the number of shading points for the least important areas, while Max Resolution sets the number of shading points for the most important areas. Recompute uses three modes: “First Time”, the GI will be calculated for the first render only, further renders will reuse the data; “Always”, the GI data is always recalculated when you render; “Never”, GI is not calculated when you render. Identical Noise Distribution makes the noise homogeneous. In Standard mode this setting has little effect. Now set your GI parameters and make a render (**Fig.13**).

In **Fig.13** you can see a render with GI using the settings shown in **Fig.12**. You can refine the GI effect for each material using the GI settings on the illumination page of the Material Editor. I have disabled the Receive GI parameter in the Illumination page of the BK material and all the rest of the materials are set as default, as shown in **Fig.14**.

We may also use Ambient Occlusion to make the render more realistic. Ambient Occlusion (AO) determines to what degree each individual

surface point is exposed and colours it accordingly. Corner areas, holes, and areas between objects placed very close to each other will see less of the sky and will therefore be darkened in accordance with the AO settings. AO can be found in two locations within Cinema 4D: as a channel shader (Material Editor > Texture > Effect > Ambient Occlusion) and as a global effect applied to the entire scene in Rendering Settings (**Fig.15**).

The options in both dialogue windows are identical. If you use Ambient Occlusion as the shader for each material, you have the chance to render the AO separately by using the Multi-Pass option in Render Settings. I chose to use the AO as a global effect applied to the scene, so let's take a look at its settings in the Ambient Occlusion page. Enable "Apply to Scene" to use the AO. Use the colour option to define the colour gradient that the AO assigns. The left end of the gradient represents areas with minimal exposure, while the right end of the gradient represents the areas with maximum exposure. Minimum Ray Length determines how the gradient defined in colour will be rendered between exposed and non-exposed areas. Maximum Ray Length defines at what distance the surfaces see each other. Accuracy, Minimum Samples and Maximum Samples are responsible for the AO quality. Use Minimum Samples to define the number that should be used in less critical areas. Use Maximum Samples to define the number of samples that should be used in critical areas.

Before launching the final render, let's take a look at Render Settings to summarise what we've said so far. In the Output page of Render Settings, choose the resolution of the render, in the Save page, set the path and the format, in the Antialiasing page, choose "Best" as the mode, use "Sinc" as the filter and use GI and AO (**Fig.16**).

And finally, make a render (**Fig.17**).

Aged & Weathered Environment

Creating a Complete Scene from Concept to Render

Part 6: Lighting & Rendering

Niki Bartucci & Giuseppe Guglielmucci (a.ka. Piko)

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Or contact them:
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Introduction

These 80 plus page, Downloadable PDF's aims to show a comprehensive guide to creating a Bugatti Veyron for people new to this type of exercise, but is not suitable for beginners who are not familiar with using 3D software.



Bugatti Veyron

Car Modelling Series

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Chapter 1: Modelling the Chassis - Basics
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Chapter 3: Lights, Radiator Grill & Vents
Chapter 4: Wheels, Tyres & Rims
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Chapter 6: The Materials & Finishes
Chapter 7: Lighting Set up & Render

The featured artists are as follows:

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Cinema 4D - Emlyn Davies
Lightwave - Vojislav Milanovic
Maya - Brendan McCaffrey
Softimage XSI - Krisztián Szeibold

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Creating a Complete Scene From Concept to Render

This series will run over the next six months and will endeavour to give you an insight into how a fully realised 3D scene may be arrived at from beginning to end. The tutorials will attempt to address the key issues and techniques appropriate in achieving this, from concept sketches through to building the 3D scene, mapping and unwrapping, texturing and eventually to lighting and rendering, culminating in a final render. The emphasis over the course of the series will be on the texturing, which will be covered in two of the six instalments, and principally the aging and wear of materials.

The schedule is as follows:

Issue 037 September 2008

Part 1: Importance of Reference

The series will begin with a look at the gathering and importance of reference material, and then transposing these into some concept sketches and a concept / production painting.

Issue 037 September 2008

Part 2: Modelling Overview

This chapter will go on to deal with a general modelling overview, which will be non-software specific, and then follow with a look at Photoshop and some general preparation of textures.

Issue 038 October 2008

Part 3: Preparing the Textures

This chapter will focus on Photoshop and more specifically, the job of preparing textures, including painting out seams and making images tileable.

Issue 041 January 2009

Part 4: Mapping

This chapter will focus on the mapping and unwrapping of your scene

Issue 041 January 2009

Part 5: Texturing Principles

This chapter will focus on texturing principles and will cover texture resolution, bump specular and normal maps along with combining textures. It will also cover using masks and adding dirt and grime

Issue 041 January 2009

Part 6: Lighting & Rendering

The final chapter will discuss lighting and rendering techniques and show how a simple lighting rig can be set up, along with different render passes ready for a final composite in Photoshop.

AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 6: LIGHTING & RENDERING

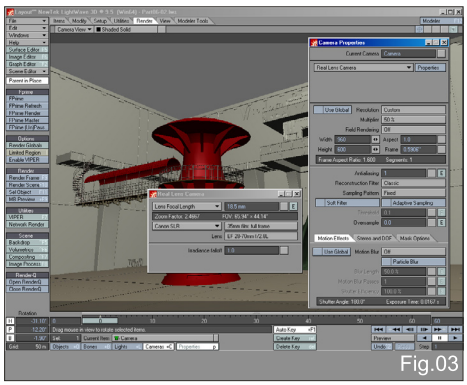
Welcome to the last part of this tutorial series. I hope you've finished all the textures and materials from part five, because in this part we are going to be setting up the scene for rendering!

Create a new scene and load your object. Now bring your camera into a position that fits the look you want to deliver. I suggest you play around with the look; for example, try to use a high value for the Lens Focal Length and move the camera very far away from the object so you have a telephoto lens optic. Or do the opposite and use a wide angle lens by using a small value for the Lens Focal Length (**Fig.01**).

Don't rely on using the default perspective camera – there are more interesting options. For example, if you want to get rid of perspective distortions, you can use a "Shift Camera". This would be the right choice for architectural visualisations.

I used a "Real Lens Camera", simulating a Canon SLR camera with an EF 28-70mm lens. This way I even added a bit of lens distortion and some vignette. I also banked the camera a bit, to create a more dynamic look.

While in the camera settings, set your render resolution. I used full HD (1920 x 1280 pixels)


Fig.03

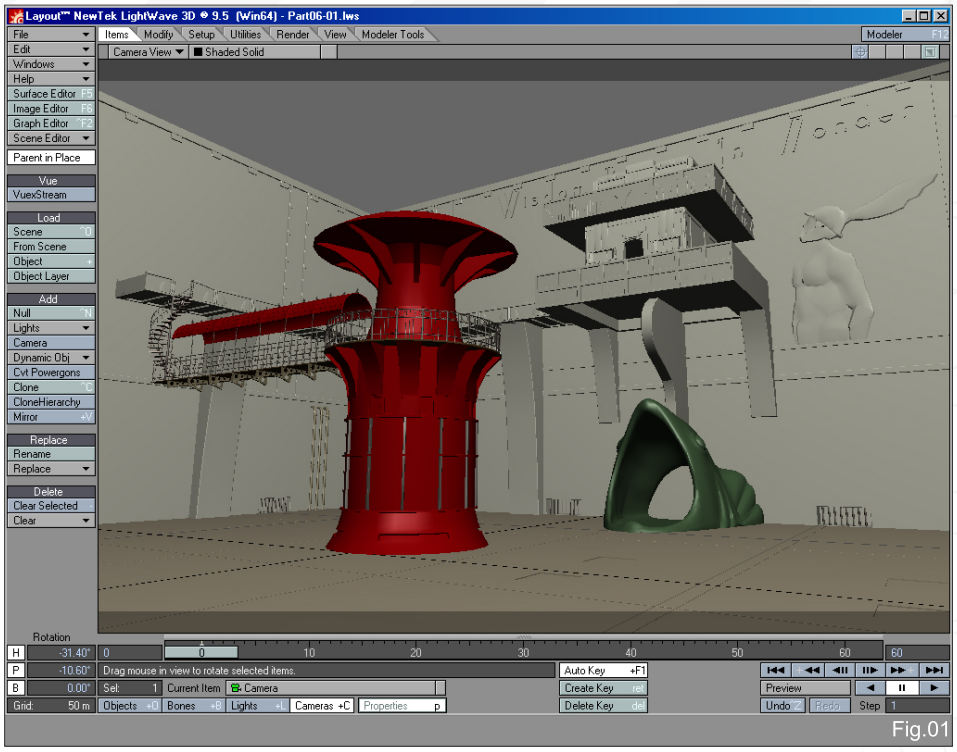


Fig.01

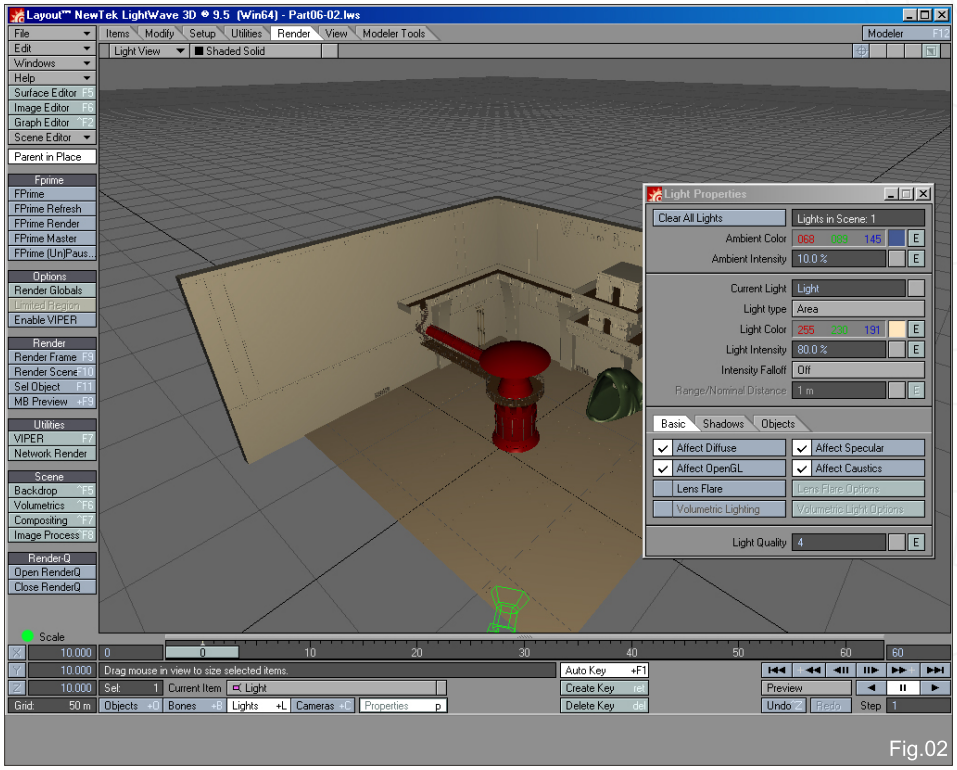


Fig.02

for my final render. For test rendering I used 50% of the resolution. The other settings will be okay for the purpose of test rendering (**Fig.02**).

Next we have to set the light. For the key light, choose an Area light that is shining in from the right side, slightly above the camera. Scale the area light to 20 on each axis so the shadow is softened a bit. Instead of an Area light, you could also choose a sphere light (LW 9.5) – the look is almost identical, but rendering might be faster, depending on the scene.

Choose a light intensity of 80% and an orange colour. For Ambient Colour I suggest using blue, and as a value for the Ambient Intensity – 10%.

These colours follow the basic rule of sunlight, being more yellowish; shadows are more bluish (**Fig.03**).

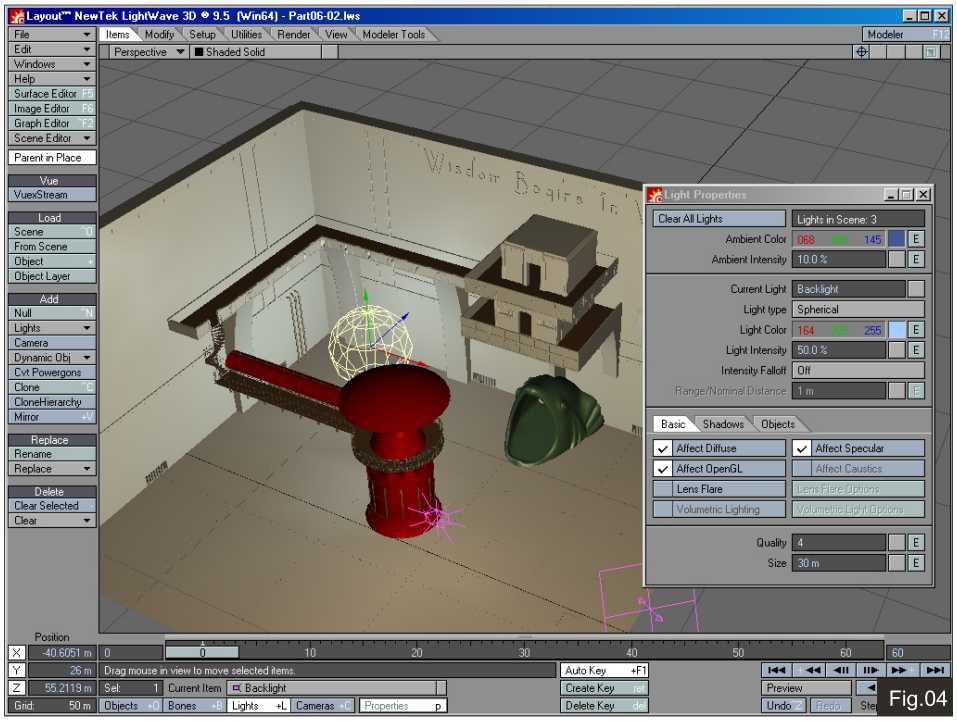
A spherical back light is now placed right behind the tower. By doing this you can ensure that the tower stands out from the background more. The spherical light should have the size of 30m and a light bluish colour. Light intensity should be 50%.

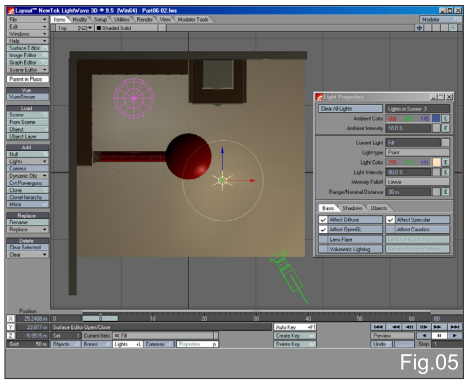
The light size will change the appearance of the shadow – the bigger the light, the smoother the shadow. If anything at all, we want a very soft shadow here.

Make sure that the sphere of the light does not intersect with any object, or there will be unwanted shadows.

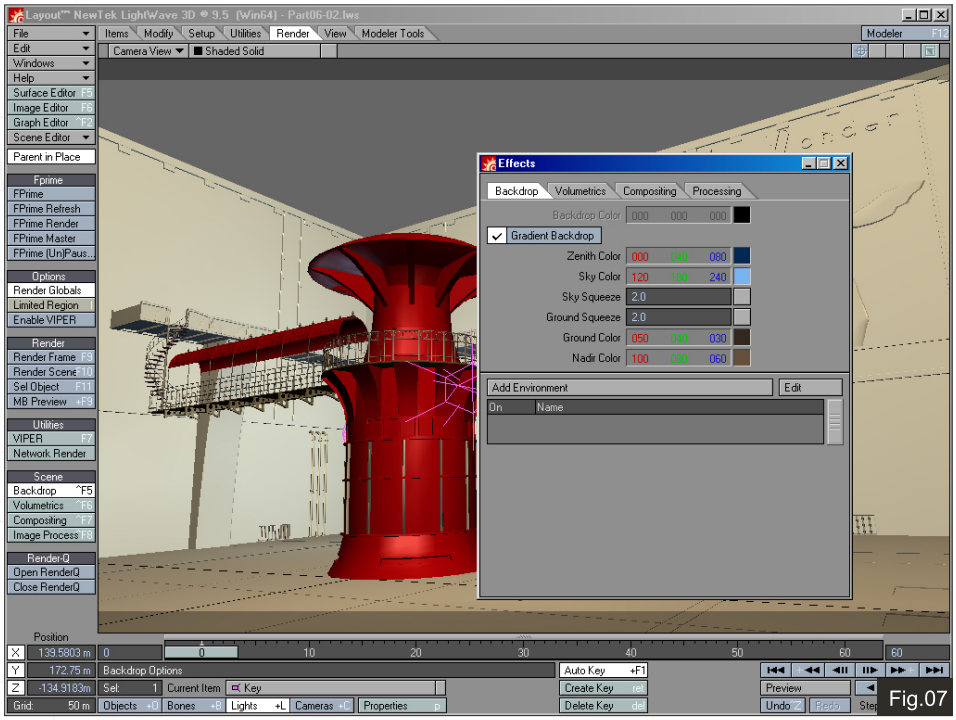
You can also use a Point light instead of the spherical light, if you want. You can also turn of the shadow, as the light only serves to highlight the elements behind the tower (**Fig.04**).

To make the tower even more prominent, you can highlight the front a bit more too. Add a Point light and place it in front of the tower. Use the same colour and intensity as for the









key light. The Intensity Falloff should be set to Linear; the Range should be 30m.

Make sure to disable the shadows for this one, as we only want the highlight spot on the tower this time (**Fig.05**).

We are using ray traced shadows for all our lights, so check “Raytrace Shadows” in your Render Globals before you make any test renders.

If you compare the rendered image with (bottom) and without (top) the fill and backlight,

you will see that the look is much more interesting and focused (**Fig.06**).

The rendered image already looks quite nice. For rendering animations this is almost everything you need. But as render times are not our biggest concern for this scene, I think we can allow ourselves to use Radiosity.

You might have noticed the blue background colour in my test renders. Radiosity is also using the background colour, so make sure to enable the Gradient Backdrop. The default setting will already give you good results; however, feel free to test with fully different background gradients to gain a more dramatic look (**Fig.07**).

Don't worry about the background itself though as it will be replaced later in Photoshop.

In the Global Illumination tab from the Render Globals, enable Radiosity. Set type to Final Gather using the Interpolated modus. I am again going to render with the default settings, as they usually work really well and also render fast.

If you feel the image is too noisy in the end, you can simply increase the value for Rays Per Evaluation (**Fig.08**).

I think the test render looks alright, so it's time to prepare the final rendering (**Fig.09**).

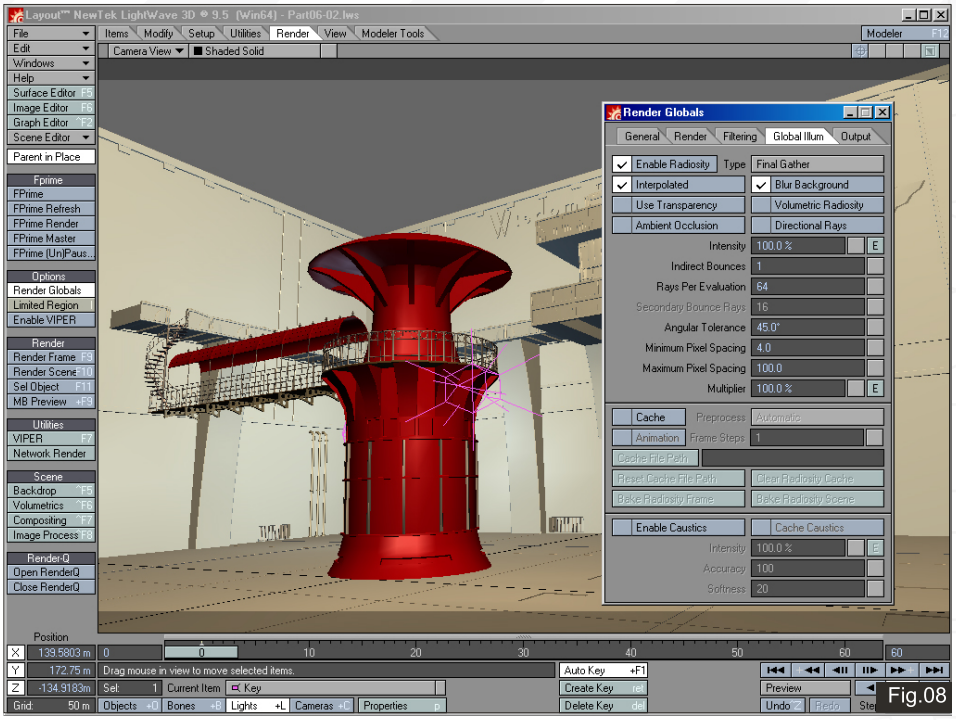


Fig.08


Fig.09

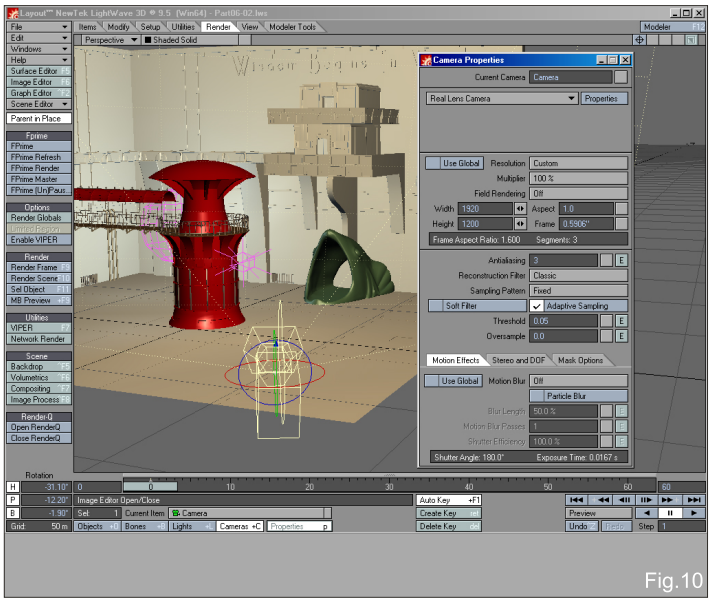


Fig.10

In Camera Properties, change the resolution multiplier back to 100% so you have the final render resolution again.

Set the Antialiasing Level to 3 and activate Adaptive Sampling with a Threshold of 0.05. These settings ensure a noiseless image. If your render times are way too slow this way, reduce the Antialiasing Level to 1 and increase the Adaptive Sampling Threshold to the default value of 0.1. This will result in a noisier image, but renders a lot faster (**Fig.10**).

In order to have the best possibilities for post production in Photoshop, it would be best to use layered output. In the Processing panel, add the image filter "PSD Export". In the filter settings, set a path for the output of the PSD and check the layers you'd like to output. I like to keep it simple

here as well and just choose the Shadow pass as an extra layer, and the very important Depth pass.

Please note: Sometimes some layers won't work correctly with the PSD layer Export. For me, this happened with the Depth pass. If this is the case, simply choose another Image Filter named "Buffer Export". Here you can choose, for example, the Depth pass to be saved as a separate file. For other passes, just add additional Buffer Export filters. Keep in mind that this is also the right technique for rendering passes for animations.

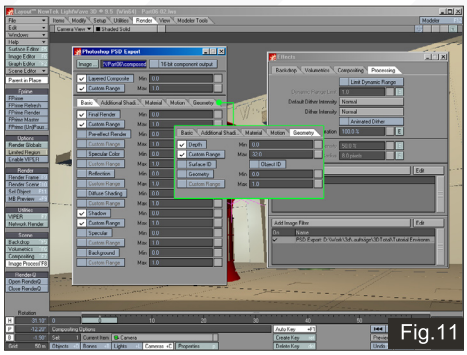
For rendering, make sure to use the "Render Scene" (F10) button – just set the image range to 1 frame (Single Frame rendering) (**Fig.11**).

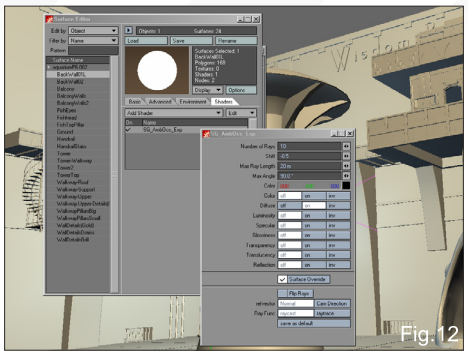
Another important layer is best to be rendered separately – Ambient Occlusion. Disable the "PSD Export" entry in "Image Processing". Then go to material editor and enable the "SG_AmbOcc_Exp" Shader. Double-click on it for the properties.

Check "Surface Override" so that the surface appears fully white. For Max Ray Length use a value of 20m. Copy this shader to all the materials you have in the scene.

Now simply hit render again. Save this Ambient Occlusion pass as a different file (**Fig.12**).

Note: SG_AmbOcc_Exp is a free Ambient Occlusion Plugin that you can find and download via the great http://www.flay.com database.


Fig.11


Fig.12

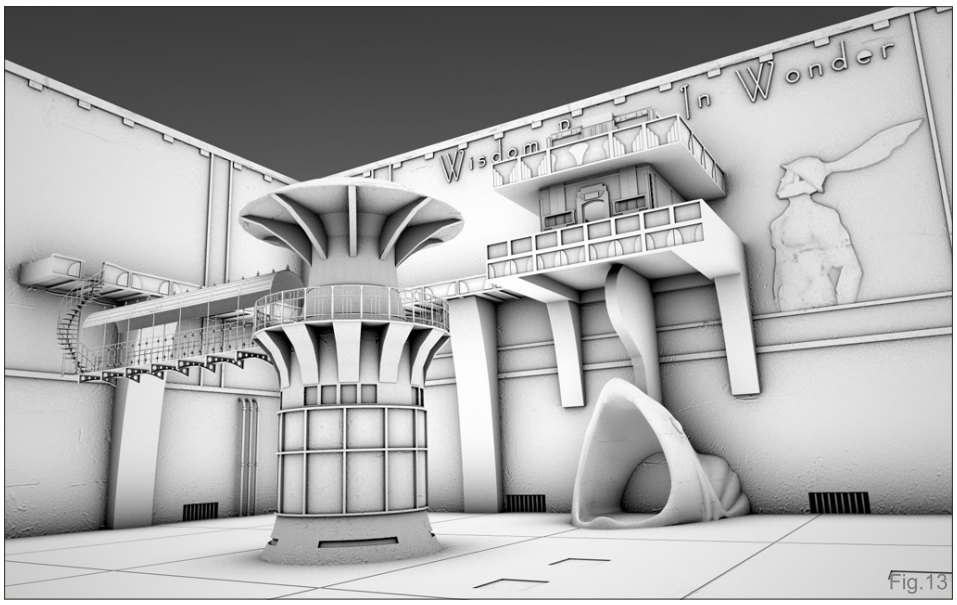
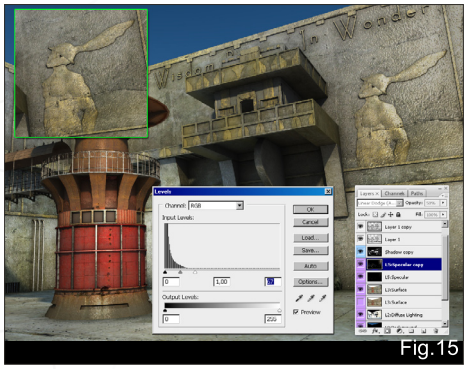

Fig.13


Fig.14


Fig.15

The Ambient Occlusion layer is black for all the areas that are hard for light to reach. Therefore it is ideal for simulating dust, dirt or shadows. Ambient Occlusion is usually a universally usable technique to enhance your images and animations (**Fig.13**).

Open the layered PSD file and the Ambient Occlusion pass in Photoshop. Copy the Ambient Occlusion pass into a new layer of the layered PSD. This layer should be on top of all other layers. Set the Blending Mode to Multiply (**Fig.14**).

Now you have all the layers in place and are able to adjust them individually. For example, let's make the specular stronger by duplicating layer L5: Specular. Now the specular is twice as strong. Now use a bit of blur on that layer for a slight glow effect on all shiny surfaces. Finally, you can adjust the levels for that layer, to bring out the effect even more.

I simply used the duplicated layer as it is with 50% visibility (**Fig.15**).

Take a look at layer L3: Surface. This layer contains the colour information. I used a Selective Colour adjustment layer to get rid of the very prominent red tone. To give the whole image a brownish look, I also added a Hue/ Saturation adjustment layer set to Colorize at 30% visibility (**Fig.16**).

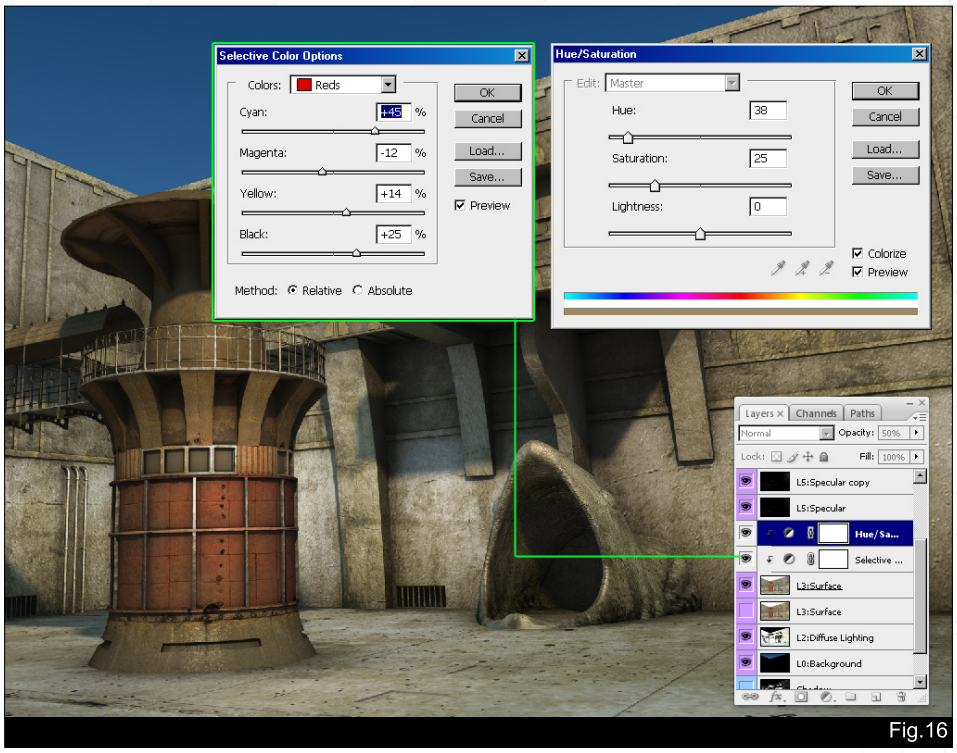


Fig.16

Now create a new layer folder. Click on Select > Load Selections and choose the Alpha in the Channel box. Invert this selection so only the sky is masked. Add a vector mask to the folder. Now every layer you put into this folder is only visible for the part of the image where the sky is.

In this example I used a photographed sky and some big rock for the background (**Fig.17**). When you are done with your image manipulation, copy the layer "Depth" and paste it as new Alpha Layer. Now flatten all layers (**Fig.18**). Click on the Filter > Blur > Lens Blur. As Depth Map source choose the Alpha map we just created (Alpha 1). Now click into the

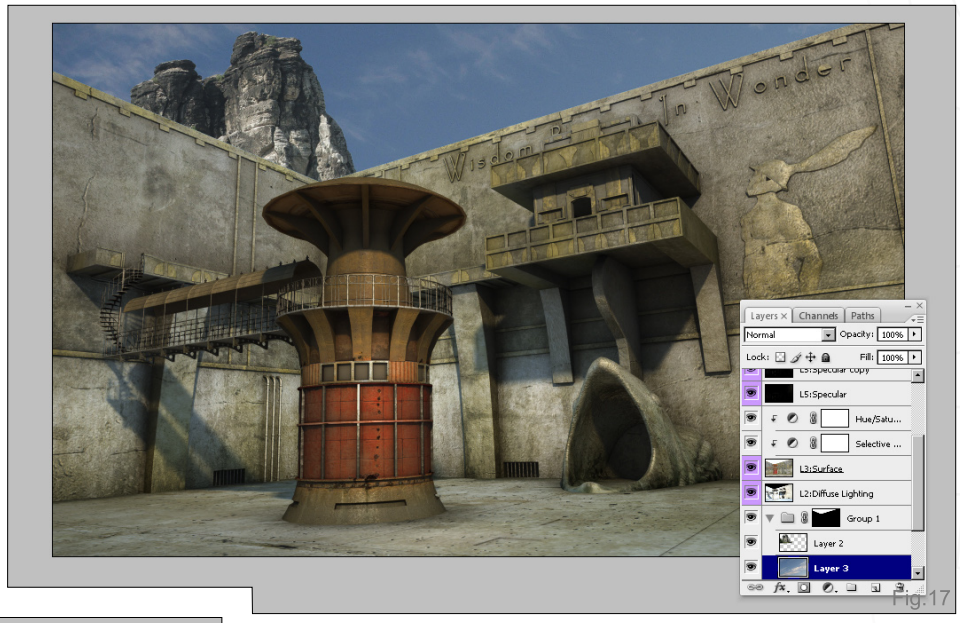


Fig.17

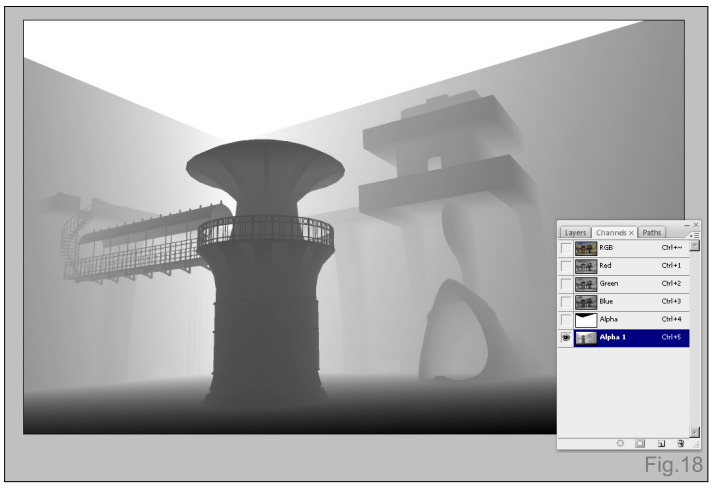


Fig.18

image preview to set the point that is in focus – for example the tower. The amount of Blur is now adjusted via the Iris Radius. A value of 10 is just perfect. I suggest using this effect at 30% to 40% visibility only, this way the image does not look like a miniature, but only slightly blurred in the distance (**Fig.19**).

Tip: The depth map can also be used to add a bit of haze by simple using the screen blend for it.

Have a look at the final image. As you can see, there is a lot you can do to change the look of the rendered image after rendering by working with layers. This can be especially powerful when working on animations, as

you have full control over every aspect of the image (**Fig.20**).

I hope this tutorial has proved to be interesting for you. If you have any questions, please feel free to contact me via my homepage: http://www.dough-cgi.de

AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 6: LIGHTING & RENDERING

DOUGH-CGI : ROMAN KESSLER

For more from this artist visit:
http://www.dough-cgi.de
Or contact them:
info@dough-cgi.de

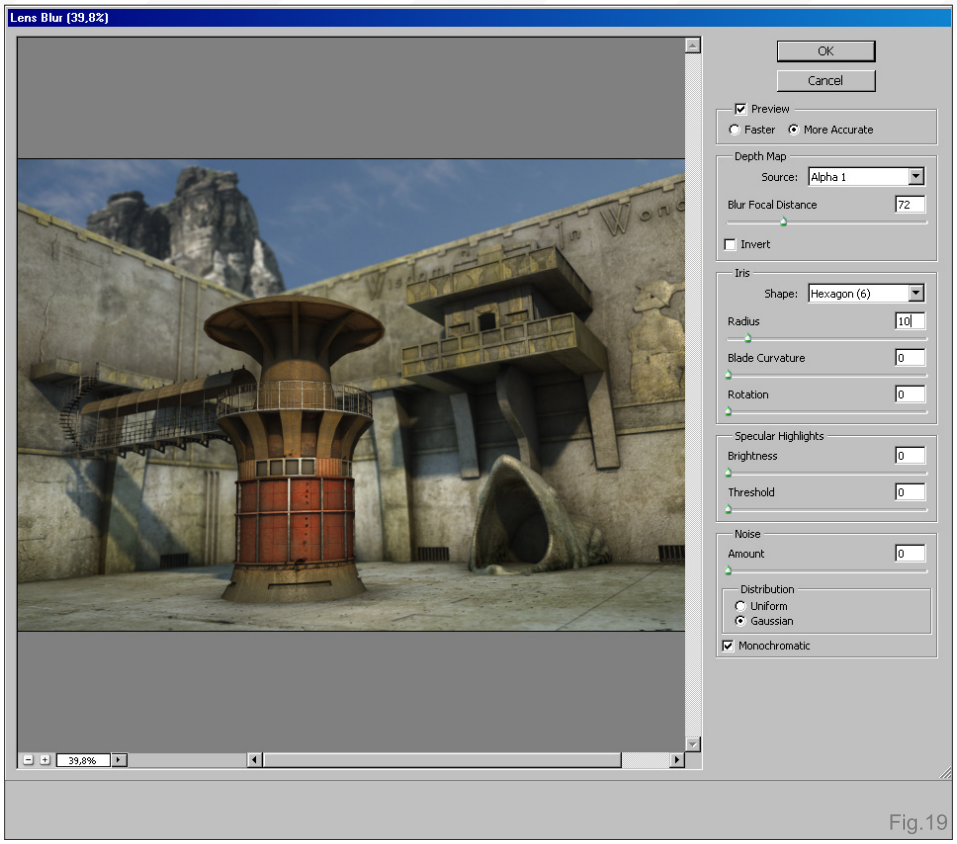
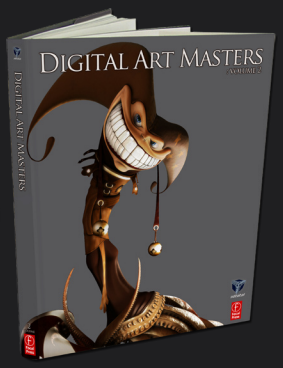


Fig.19

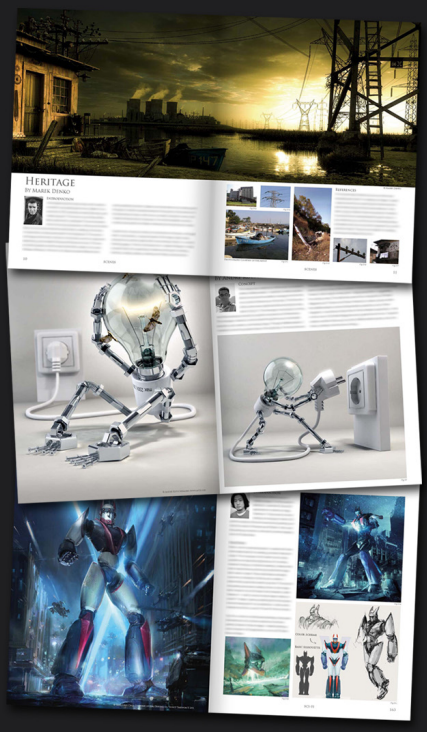


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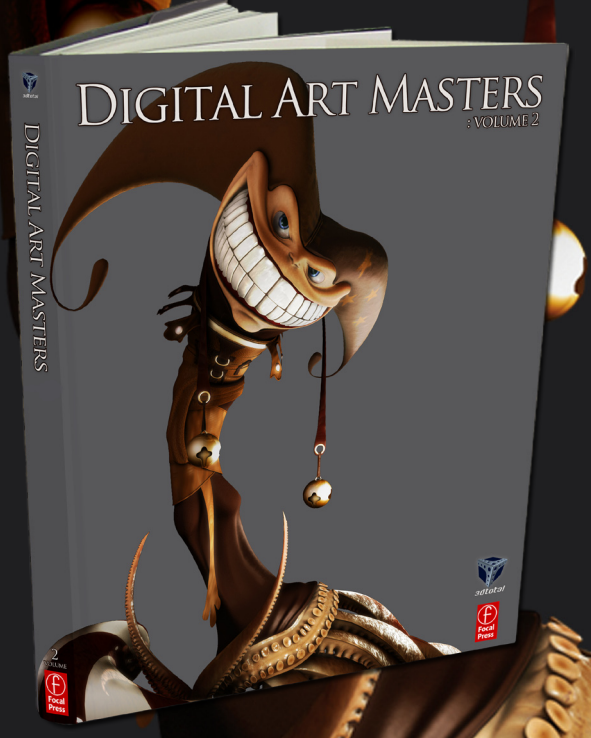
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AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 6: LIGHTING & RENDERING

INTRODUCTION

In the final part of this tutorial, I will introduce the basic idea of how to set up the lighting in our scene and render the image for a final composition. When it comes to the rendering, it is always related to time, and you will discover that every object/light/shadow inside your scene can cause different render times. To finish up at the end, we will composite our render in the post-production stage.

DIFFERENT METHODS TO SET UP LIGHTING

You can find a detailed description in Maya's help file for every type of light available in Maya; here I will introduce some basic methods of lighting setups for our scene.

3-POINT LIGHTS

If we don't use an advanced lighting system, like Final Gather/Global Illumination, we'd usually set up a basic 3-point lighting system for a scene. A key light simulates our main light source, and a fill light/backlight helps to light up the dark area (**Fig.01**).

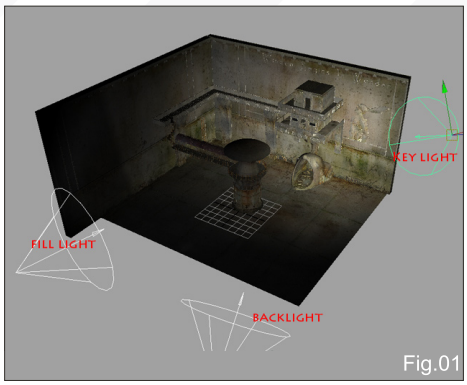
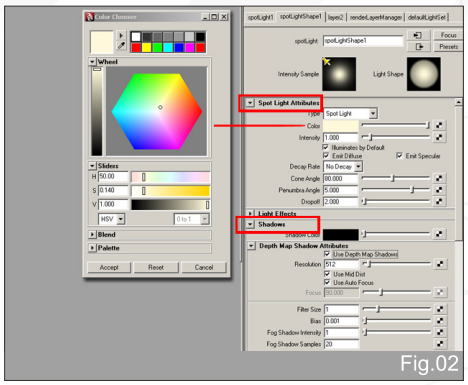
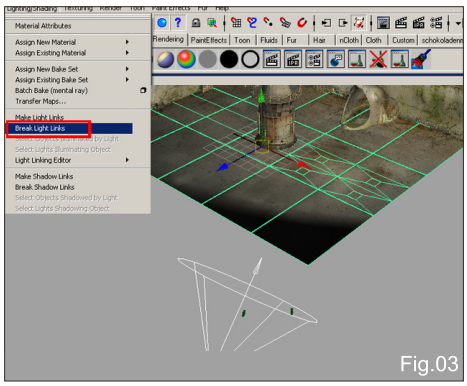
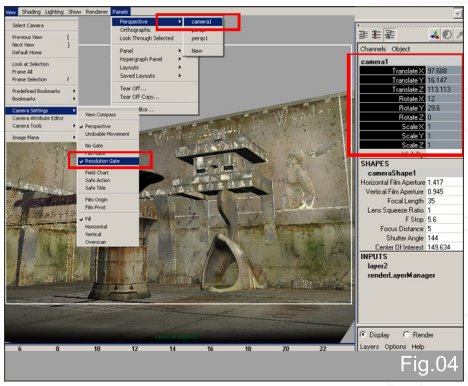


Fig.01

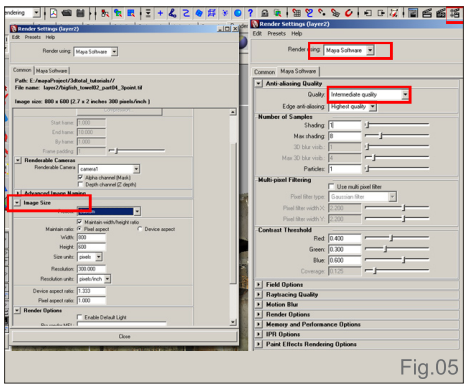

Fig.02


Fig.03


Fig.04

A. Depth Map Shadow

1. In this 3-point lighting setup example, we use three spot lights for our scene. If we switch to the Attributes Editor of our spot light, the two key sections we are focusing on are Spot Light Attributes and Shadows. Inside Spot Light Attributes we have a Colour section, to control our light colour. If you click on the white colour box, a Colour Chooser menu will pop-up for us to select the colour we want. Let's pick a warm colour (H50, S0.14, V1) to simulate sunlight. The Cone Angle section allows us to control the size of the light, so let's set it to 80. A higher value in the Penumbra Angle section can soften the edge of the light, so let's enter a value of 8 here. The Dropoff value of 3 is to control the width of our light being cast on the scene. Go to the Shadows section, and in Maya there are two types of shadows provided: Depth Map and Ray Traced shadows. We'll start by using the Depth Map Shadows for our scene, and in the Resolution section a higher value of Resolution will give us a higher quality of shadow (in multiples of 64); however, at the same time it will also increase the render time. First, let's set it to 512, and the Filter size will allow us to smooth the edge of the shadow.


Fig.05

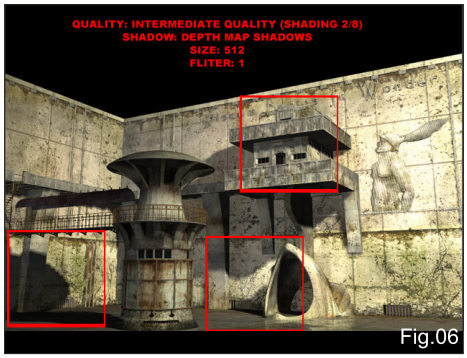


Fig.06

2. For the Fill light and Backlight, the settings are almost the same; the only difference is that we don't use shadows for both of these two lights, and the intensity will be set it to 0.1 for both of them (**Fig.02**).

3. We can see the backlight is placed under the floor, and this will block out our backlight for the scene. To avoid this we can just break up the connection between the backlight and the floor. To do this, let's select our backlight and the floor, go to the main menu and select Lighting/ Shading > Break Light Links; this will break up the connection between the two objects (**Fig.03**). Under this menu you're also able to break up some object shadows.

4. After the basic lights are set up, let's create a camera (Create > Cameras > Camera), switch the view to our created camera inside our View port (Panels > Perspective > Camera1), and

make our Resolution Gate (View > Camera Setting > Resolution Gate). This makes it easier to preview our render frame; we'll move our camera angle by following our 2D concept image as reference. Once the camera is set up, lock the camera movement to avoid any unnecessary modifications. Under the Channels menu, with our camera selected, let's select all the Translate XYZ/Rotate XYZ sections and right-click on any one of them. A menu will pop-up, in which we want to select Lock. From now we will no longer be able to move or rotate our camera (**Fig.04**).

5. Coming now to the part of render settings, let's click on the Render Setting icon at the top of our menu, and inside the Render Setting windows, let's select Maya software as our render, and a preset Intermediate Quality under the Quality section (a higher number of shading samples provide less noise in the render quality, but this also causes longer render times). Under the Common section we'll set our Image Size to 800x600 pixels (**Fig.05**).

6. Once everything is set up, let's click on the Render Current Frame icon (the second on the right of the Render Settings icon). From our render results (**Fig.06 – Fig.08**) we can see the different qualities of the shadows affected by the resolution of the depth map. Once the resolution goes higher, the render times also start getting longer, too.

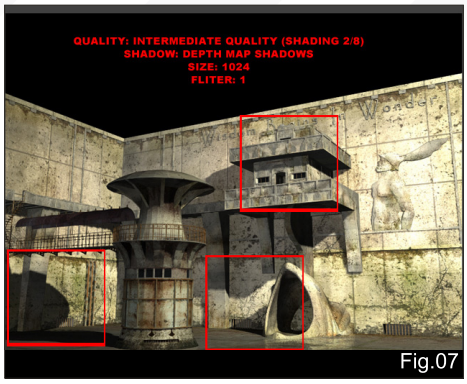
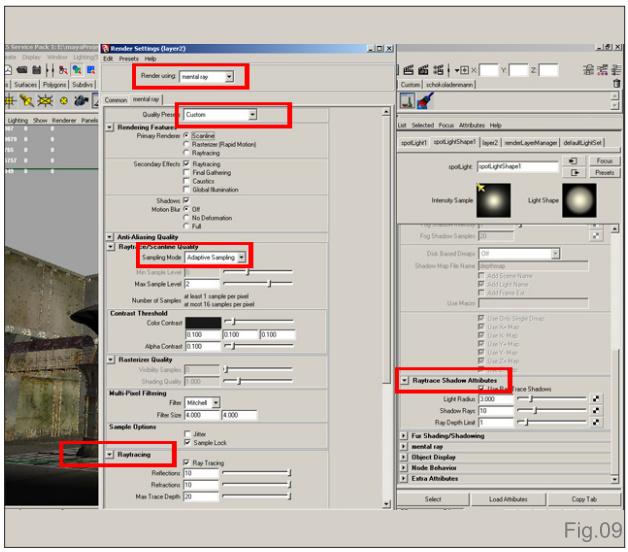
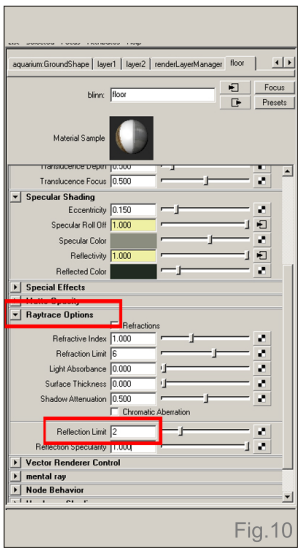


Fig.07



Fig.08


Fig.09


Fig.10

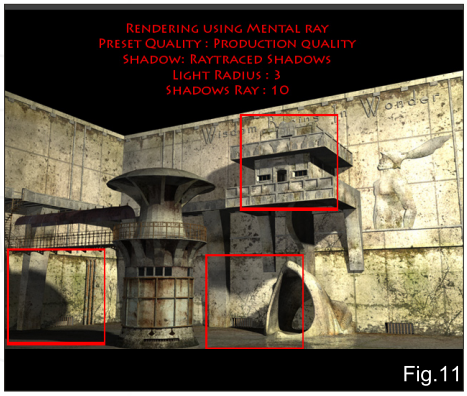
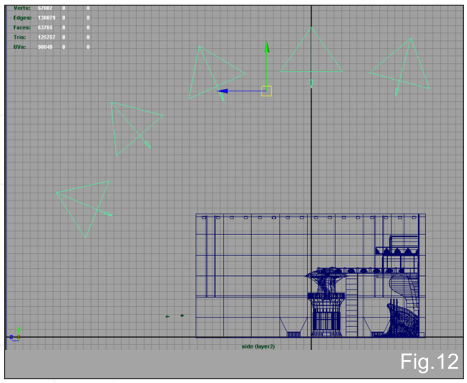


Fig.11


Fig.12

B. Raytrace Shadow

1. Raytraced shadows provide an accurate shadow and are able to cast shadows through transparent objects, such as glass, but the render times are again much longer. Under the Raytrace Shadow Attributes, we can use the Light Radius to control the softness of the shadows' edge. Higher Shadows Rays can decrease the noise of the soft shadow; Ray Depth Limit allows us to control the amount of the shadow casting through the transparent object.

2. One important note about the Raytrace Shadow is that Mental Ray rendered raytraced shadows are much faster than those done with the Maya software renderer. So let's try to render our image with the Mental Ray renderer. When we open the Render Settings window, let's change our renderer to Mental Ray (Render using > Mental Ray). Let's use Production Quality under the Preset Menu. With the Production Quality, in this menu, in the first section, we're focusing on the sample quality – a Min 0 to Max 2 Sample Levels is enough to provide good quality without obvious noise in the render.

3. The Raytracing section is where you're able to control the accuracy of Reflection, Refraction and Shadows. The higher the number, the more accurate the result, but the render time will also take longer. If you open the attribute of any one of your materials, you'll find the Raytrace Options. Under this section we are able to control the reflection information of each material separately; this is helpful to avoid the unnecessary render times. For example, we will change the Reflection Limit to 2 (by default it's

set to 1) for our Floor Material. Going back to the Render Settings window, let's set a value of 2 for Reflection and Shadows under the Raytracing section (**Fig.09 & Fig.10**). After all the basics have been done, let's click again on Render Current Frame.

4. Once our render is finished we'll notice the shadow inside our scene appears much more accurate when compared to the Depth Map Shadows (**Fig.11**).

Dome Light (Simulating Environment Lighting)

1. We'll use a so-called Dome light to simulate an outdoor environment lighting setup. With the Dome lighting method we create lots of lights to surround our scene in order to simulate a complex sky lighting condition, with an additional spotlight to act as the direction of our sun.

2. First we'll create a spotlight and set the Cone Angle to 70, the Penumbra Angle to 10, and the Intensity to 0.02. Turn on the Ray Trace Shadows. Once the spot light is created, from the side view, start to duplicate and re-position the duplicated spot lights to create a curve shape over the top of the scene (**Fig.12**).

3. Let's create a group for our spot light and set the pivot to the centre of the group (Modify > Centre Pivot). Keep duplicating the group of the spot light and re-positioning them until they become a sphere shape covering the entire scene.

4. Once our Dome light is created, we'll create another spot light and set the Intensity to 0.7, the Cone Angle to 80, and the Penumbra Angle to 15. This will be treated as the sun inside our scene, so once again let's give it a warm colour. We now need to create another two fill lights and place them under the floor. Break up the link between these two fill lights with the floor (**Fig.13**).

5. The last thing to set up in our scene is the simulation of the colour of the environment

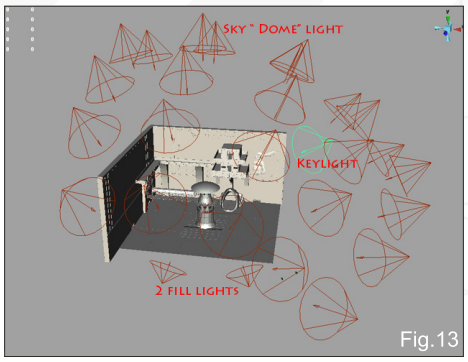
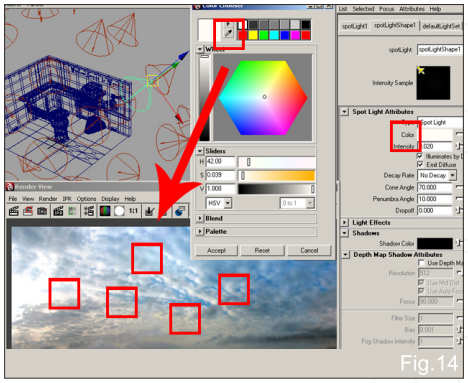
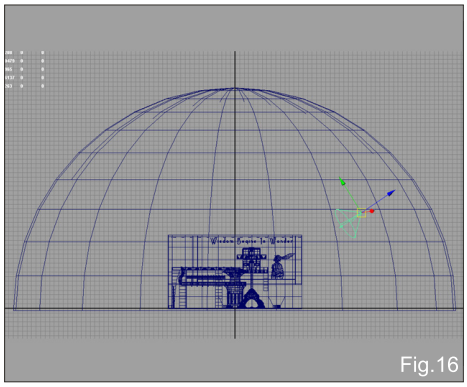


Fig.13


Fig.14

sky. Let's open a sky image (text_V3_r2 / Sky _04), and in the Render View windows (File > Open Image), with our sky image open, let's select each of our spot lights inside the scene and use the colour chooser to change the light colour randomly from the selections made on our sky image, until all the spot light colours have been chosen. Once that's done, it's time to render (**Fig.14**). We'll keep our previous settings (Mental Ray) for the render (**Fig.15**).

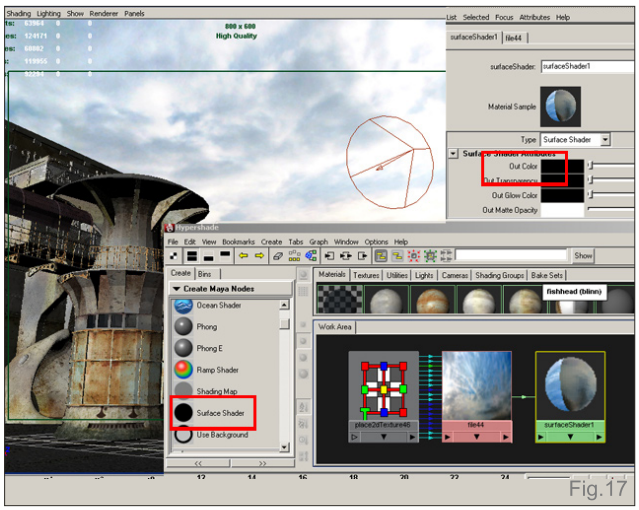

Fig.15

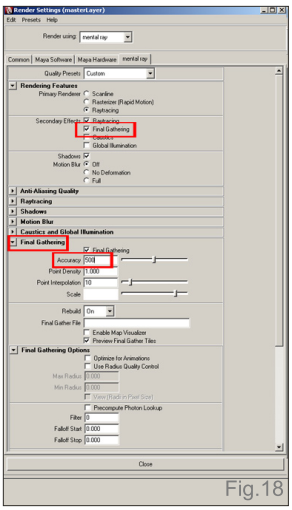

Fig.16

Rendering with Final Gather (Mental Ray)

In this last part covering lighting methods, we'll use Final Gather in Mental Ray to render our image. With a simple lighting set up, it's usually hard to simulate light in the real world. In our world the light comes from different directions and is cast onto our object with different colours. Final Gather will produce the highest-quality lighting for our scene, but at the same it will take the longest to render.

1. First of all we'll create a sphere and scale it until it covers up our entire scene. We'll cut off half of the sphere which is facing the bottom of our scene and then we need to create a spot


Fig.17


Fig.18

light and use it to simulate the sun and create the highlight inside our scene (Colour: picked from the image, Intensity: 0.7, Clone Angle: 80, Penumbra Angle: 15, Dropoff: 25) (**Fig.16**).

2. Inside the Hypershade we will create a Surface Shader and load the sky image we used before (text_V3_r2 / Sky _04) to the colour section. Apply this Surface Shader to the sphere we created and switch to the Hardware Texturing view option by pressing key number 6, followed by the image. Rotate the sphere so that it's where that the sun should be coming from, and at the same time, place the spot light in the same direction as the sun, inside the image (**Fig.17**).

3. Inside the Render Setting windows, we need to turn on Final Gather by checking the Secondary Effects > Final Gathering. Under the Final Gather section, we'll set the Accuracy to 500 rays – a higher number of rays means a better quality of lighting as a result, but at the same time note that the render time will also increase; most of the time a maximum value of 1000 - 1500 will be good enough for a final render (**Fig.18**). The Scale section is for us to control the brightness of our environment: click on the colour bar, and a Colour Chooser will appear. Let's set the V to 1.8. Final Gather gives us smoother lighting and richer colour in the render result (**Fig.19**).

Multi-Pass Rendering

Usually we'd do a multi-pass render for our scene; for example diffuse, shadows, specular and occlusion, because this makes it easier for us to process the renders in a post-production programme, such as Photoshop. However, there is an issue with the Render Pass option between Mental Ray and Maya, and to solve the problem of the Mental Ray render passes you'll be able to find a free MEL script, called "Mentalray Render Pass Toolkit", on Highend3d, which has been provided by Mr. Tran Vu Linh. I won't go beyond my ability to try and explain the usage of this MEL script, but for those of you who are interested I suggest you visit the Highend3d website for details.

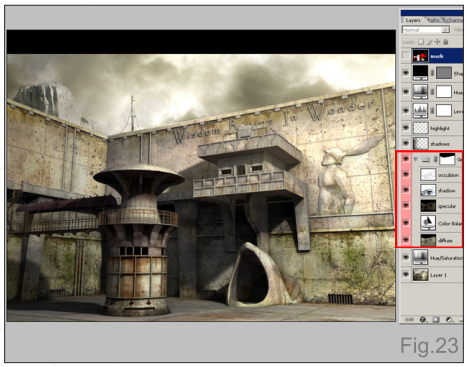
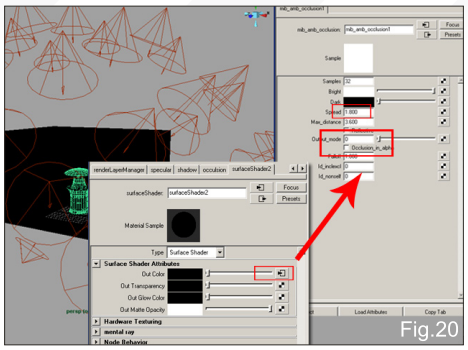
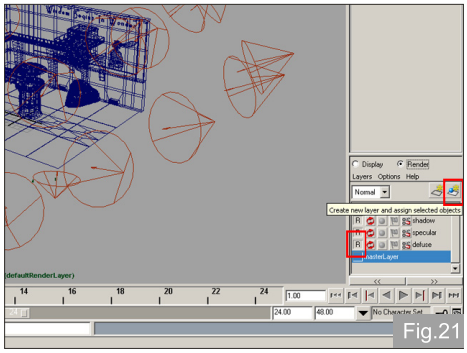

Fig.23


Fig.19


Fig.20


Fig.21

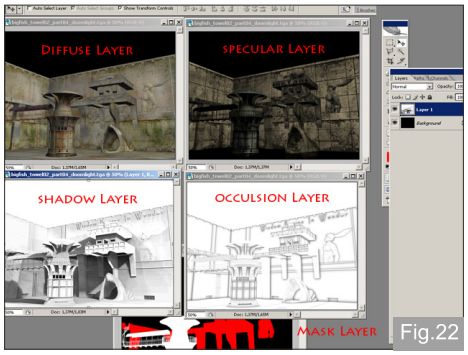


Fig.22

In this section, I will introduce the basic idea of render passes using the Maya software renderer. So first of all, let's select all the objects inside the scene, and on the bottom right hand side of the Maya programme, you'll be able to find a menu for Display and Render. Let's switch to the Render display layer, which by default is empty, and once we have all our objects selected, click on the last icon at the top of the menu (**Fig.20**); this will create a new layer for all the selected objects. Let's rename it "Diffuse" by double-clicking on the default name, Layer 2. If we right-click on the layer, a menu will pop up, and under the Preset we will able to assign a Diffuse pass for our layer. Repeat all of these steps and assign another layer for the Specular, Shadow and Occlusion layers.

Let's focus on the Occlusion Layer: once the Preset > Occlusion is applied, our objects inside the scene will turn black. This is because an Occlusion shader was automatically applied to our objects. When you click on any object inside the scene, a shader is connected to the Out-colour section of Surface Shader inside the Attribute Editor. Let's click on the connected Out-colour symbol; this will lead us to the Occlusion shader. Under the Occlusion shader we will adjust the Spread to 1.8 and the Max Distance to 3.6 (double the value of the Spread). Finally, set the Sampler to 32; this will decrease the noise of the Occlusion Layer – something we need to do a test rendering for in order to get the value of those sections in a different scene (**Fig.21**).

Once all the layers are created, by default an R will appear at the front of each layer, and this means the layers are renderable. So let's open the Render Setting windows and set the image format to Targa or Tiff, because both of these formats include an Alpha Channel. Set the Renderable Camera to Camera 1.

By default, Maya will render out each layer and save them under the name of the layer we created inside our project path. Now we'll do a

Batch Render for each of our layers, so let's go to Render > Batch Render and Maya will send out our files for rendering until finished.

Post-Production in Photoshop

Once our multiple layers are rendered, we will open all of our layers up in Photoshop (**Fig.22**). First of all, the Diffuse layer is our basic layer, onto which we will start to load the Specular layer and blend it with the Colour Dodge layer blending mode, setting the opacity to 50%. For the next layer, blend the Shadows layer with the Multiply layer blending mood option, and change the Levels of the layer to make it a little darker, along with a Colour Balance adjustment to make the shadows a little more blue-toned. At the end, we'll then blend in the Occlusion layer with the Multiply blending mode, and set the opacity to 50%. After all the layers have been correctly merged, create a group for all these layers and apply a mask to mask out the sky; this will allow us to import our previous 2D image's sky as our background. Add a highlight from the sun's direction, and finally apply a Levels and a Hue/Saturation layer to do a final adjustment on the contrast and saturation of the image (**Fig.23**).

The benefit of multiple-pass rendering is that it allows us to control each layer separately, and at the same time this can save us a lot of time without the need to re-render the entire scene when only one of the layers may need to be changed.

Final Conclusion

Rendering is always related to time; it can vary from five minutes to five hours to render one single frame. Different kinds of setups provide different kinds of results. Most of time we need to choose between the quality and the time – 24 hours for only a single frame doesn't really mean anything, but 24 minutes for each frame of 100 will become another story. How to get a good balance is always an important factor of 3D rendering. And on this final note comes the end of the tutorial. Many thanks once again for reading and following this series, I hope it has been helpful.

Aged & Weathered Environment

Creating a Complete Scene from Concept to Render

Part 6: Lighting & Rendering

Tiong-Seah Yap

For more from this artist visit:

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Or contact them:

tiongseah.yap@hotmail.com



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AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 6: LIGHTING & RENDERING

Welcome to the last part of the Aquarium tutorial. This time we'll set the scene for the final rendering, and then we'll do some compositing and retouching in Photoshop.

Open the Aquarium_Part6_START.scn scene file and create a new Infinite light. Try to position it just like in **Fig.01**. Open the light's Properties Page and set its parameters to those shown in **Fig02**. We don't need it to be too strong in intensity - it will just be used to give a general shading in the scene - so set its intensity quite low and its colour to a very pale blue, almost white (**Fig.02**).

Now we need another type of light: a Point light. It will give the scene the general "mood", so we need to position it correctly to light the bas-relief (**Fig.03**).

Open its Properties Page and set the colour to a pale yellow and the intensity to about 0.5. Also, enable Shadows and set the Umbra value to 0. Switch to the Area tab and enable Area Light. Set the Geometry Type to Sphere and the U/V values to 3/3. Finally, open the Region rendering options and enable Final Gathering (**Fig.04**). Set the Mode to Automatic, the number of rays to 256 and the Sampling Contrast to 0.020 for all the three parameters. Switch to the Rendering tab and set the Aliasing Min and Max Levels to -1 and 1 (**Fig.05**). Set all the Sampling Contrast values to 0.020. Select the sphere which is surrounding all the scene and disable its Primary visibility (**Fig.06**). You can do that by selecting the sphere, opening the XSI Explorer and clicking on the Visibility node. Set the Ambiece value (in the Rendering menu) to 0 and do a final quick region render test to check that everything is in place for the final rendering (**Fig.07**).

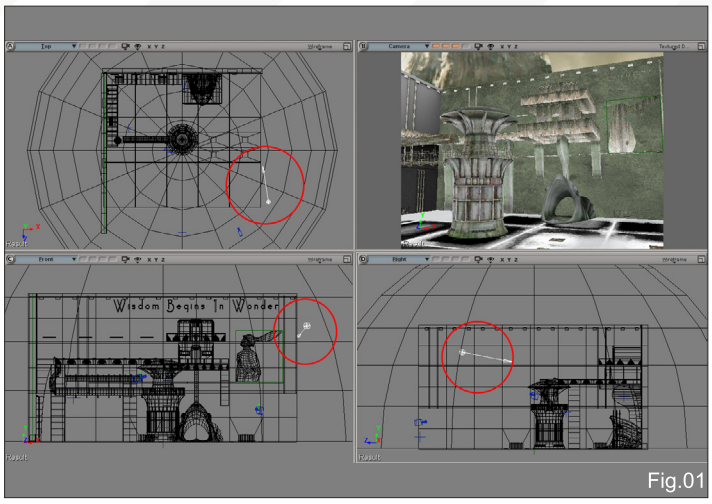
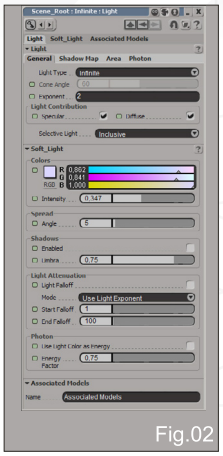


Fig.01


Fig.02

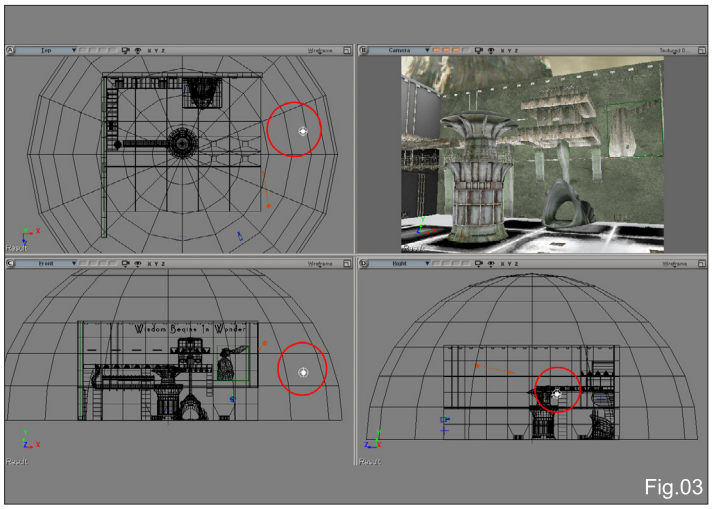
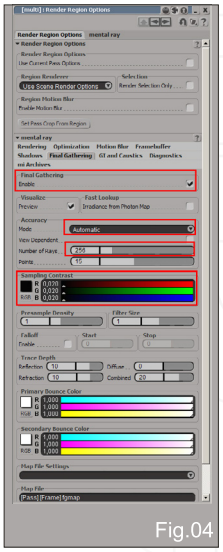
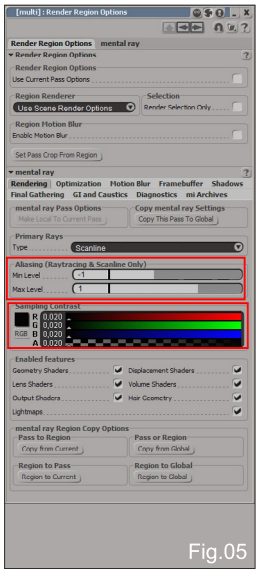


Fig.03


Fig.04


Fig.05

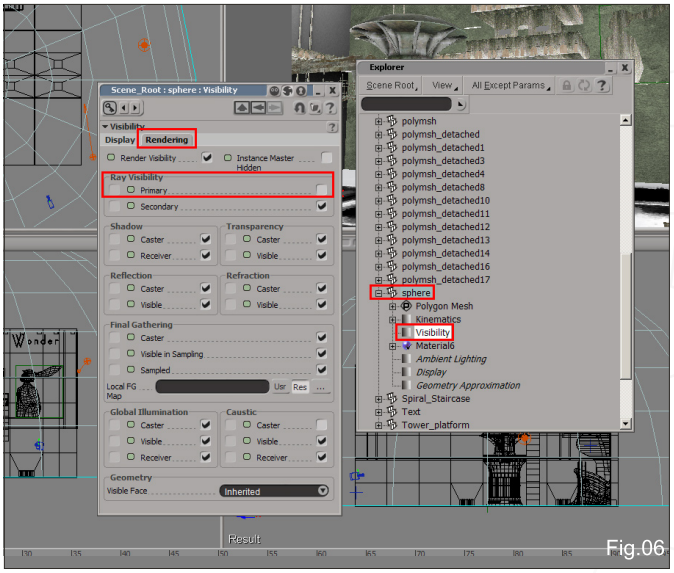


Fig.06

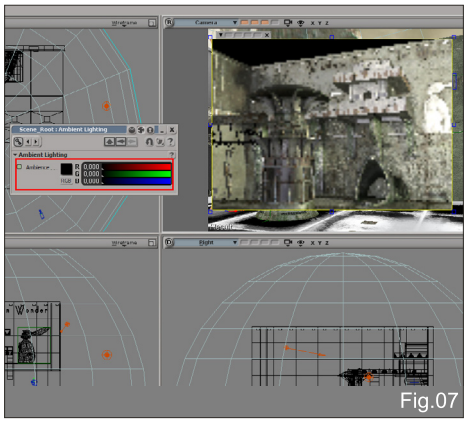

Fig.07


Fig.08

Now you can open the Render options page and transfer all the parameters from the Region render. Don't forget to set the output size and file format (use the .TGA format and make sure to save the alpha channel as well, since we'll need it later in Photoshop for compositing purposes) (**Fig.08**).

Now we need a couple of Ambient Occlusion passes. Create a new Phong shader and connect a new XSI Ambient Occlusion node to it, as shown in **Fig.09**. Leave all the parameters as they are, just pump up the Number of Samples to 256.

Render the first AO Pass and save it as a picture (**Fig.10**).

Now go back to the Render Tree and change the Ambient Occlusion shader parameters, as shown in **Fig.11**. Render the scene again and save this new AO Pass as a picture (**Fig.12**).

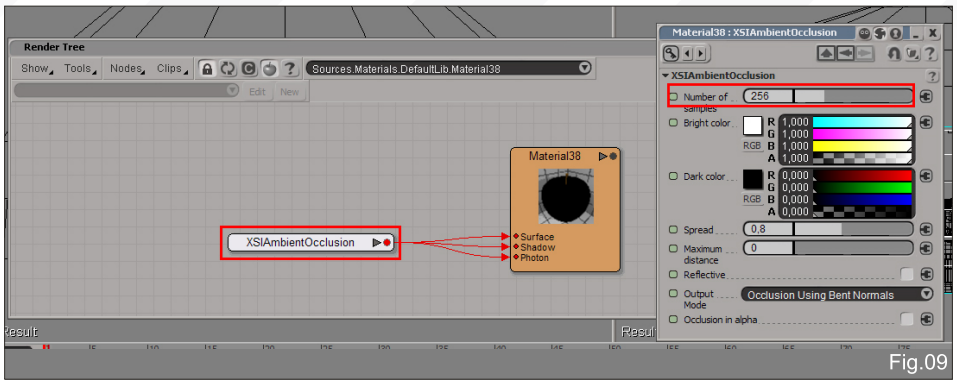
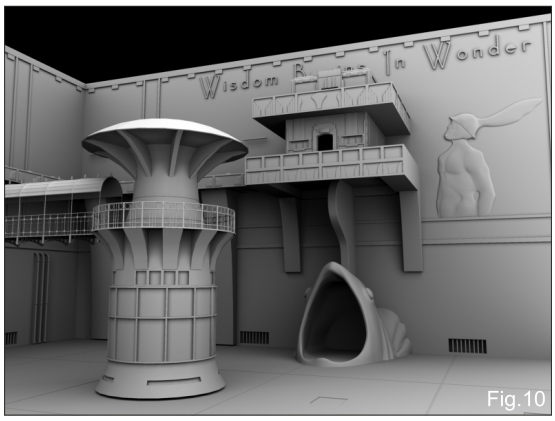


Fig.09


Fig.10

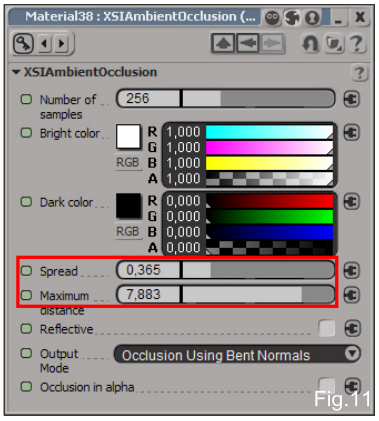
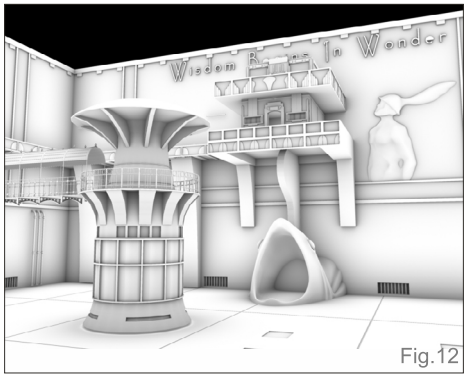
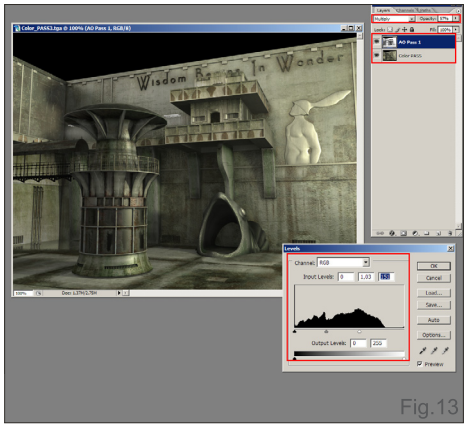


Fig.11


Fig.12


Fig.13

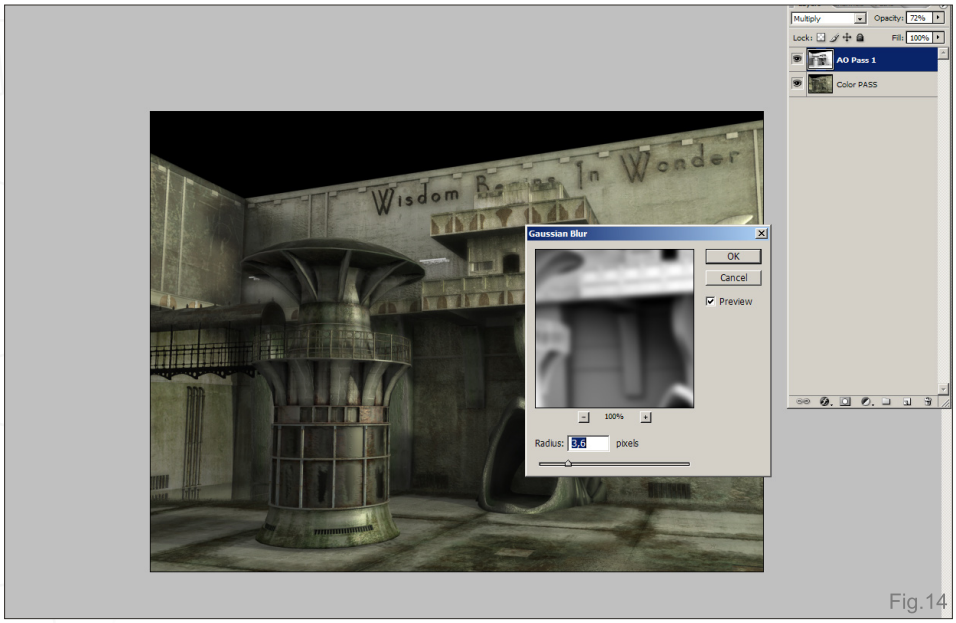


Fig.14

Open Photoshop and import both the colour pass and the first AO pass you saved earlier. Set the blending mode for the AO Pass to Multiply and lower its Opacity value (**Fig.13**). Also play a little with this layer's levels to find the best compromise between shadows and lights. Apply a Gaussian Blur filter to the AO pass (**Fig.14**) and increase its Opacity value to about 72. Now merge the two layers and import the second AO pass you saved earlier in XSI (**Fig.15**). Set its blending mode to Multiply and its Opacity value to about 74.

Merge all the layers together, then import the background (you can find it in the textures

folder) and put it behind the main layer. Use the alpha channel you saved earlier in XSI to make the background appear in the right place (**Fig.16**).

Create a copy of the background, apply a Gaussian Blur filter to it and change its blending mode to Soft Light. Also play a little with the Opacity value until you get the desired amount of "glow" (**Fig.17**).

Merge all the layers together, then duplicate the base layer and change the blending mode to Color Dodge. Also, set this new layer's opacity to about 73. Try to play a little with the blending modes to find interesting alternatives that may better suit your needs (**Fig.18**).

And here is the final rendering. Remember that you can improve several settings in the XSI scene, such as the number of samples for the glossy reflections, the antialias filter, the number of Final Gathering rays, etc.

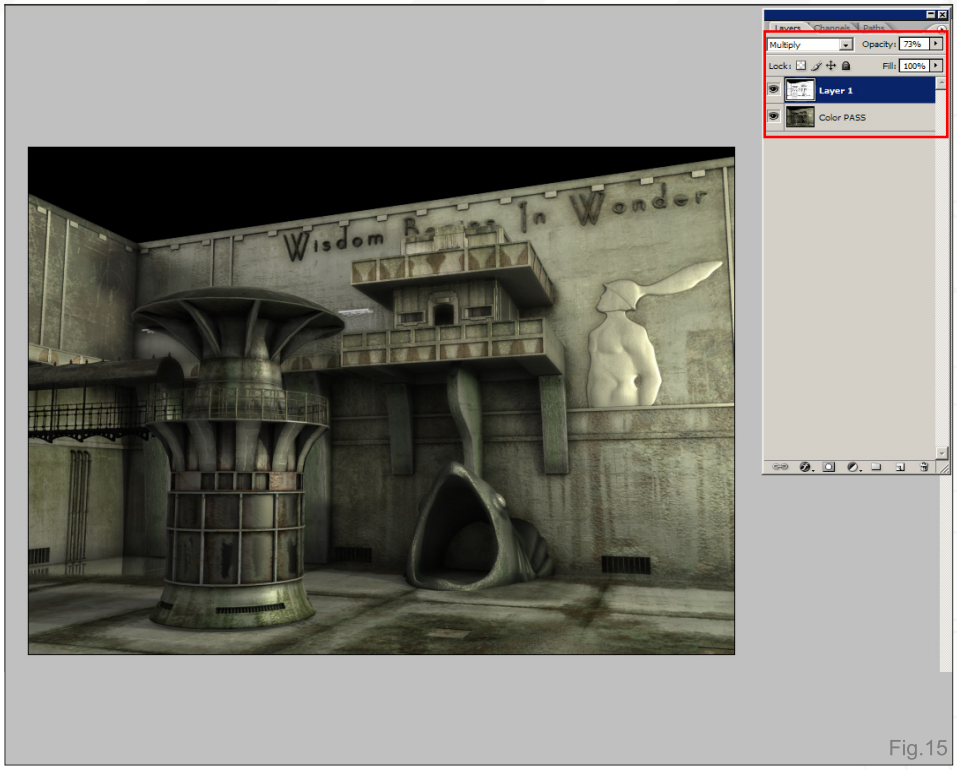


Fig.15

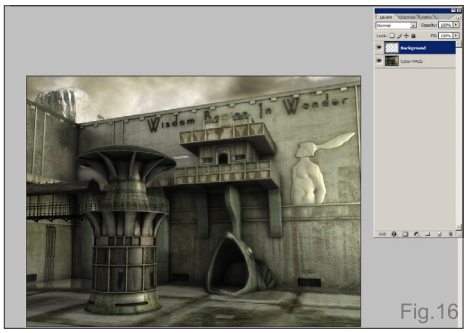


Fig.16

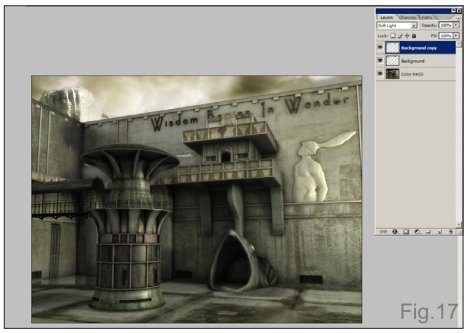


Fig.17

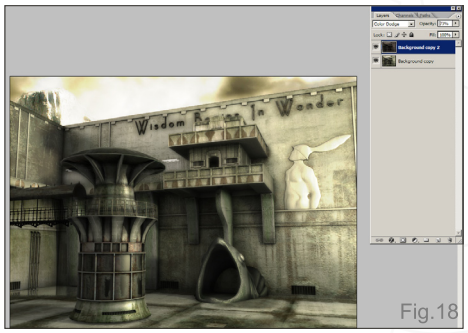


Fig.18



AGED & WEATHERED ENVIRONMENT

CREATING A COMPLETE SCENE FROM CONCEPT TO RENDER

PART 6: LIGHTING & RENDERING

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